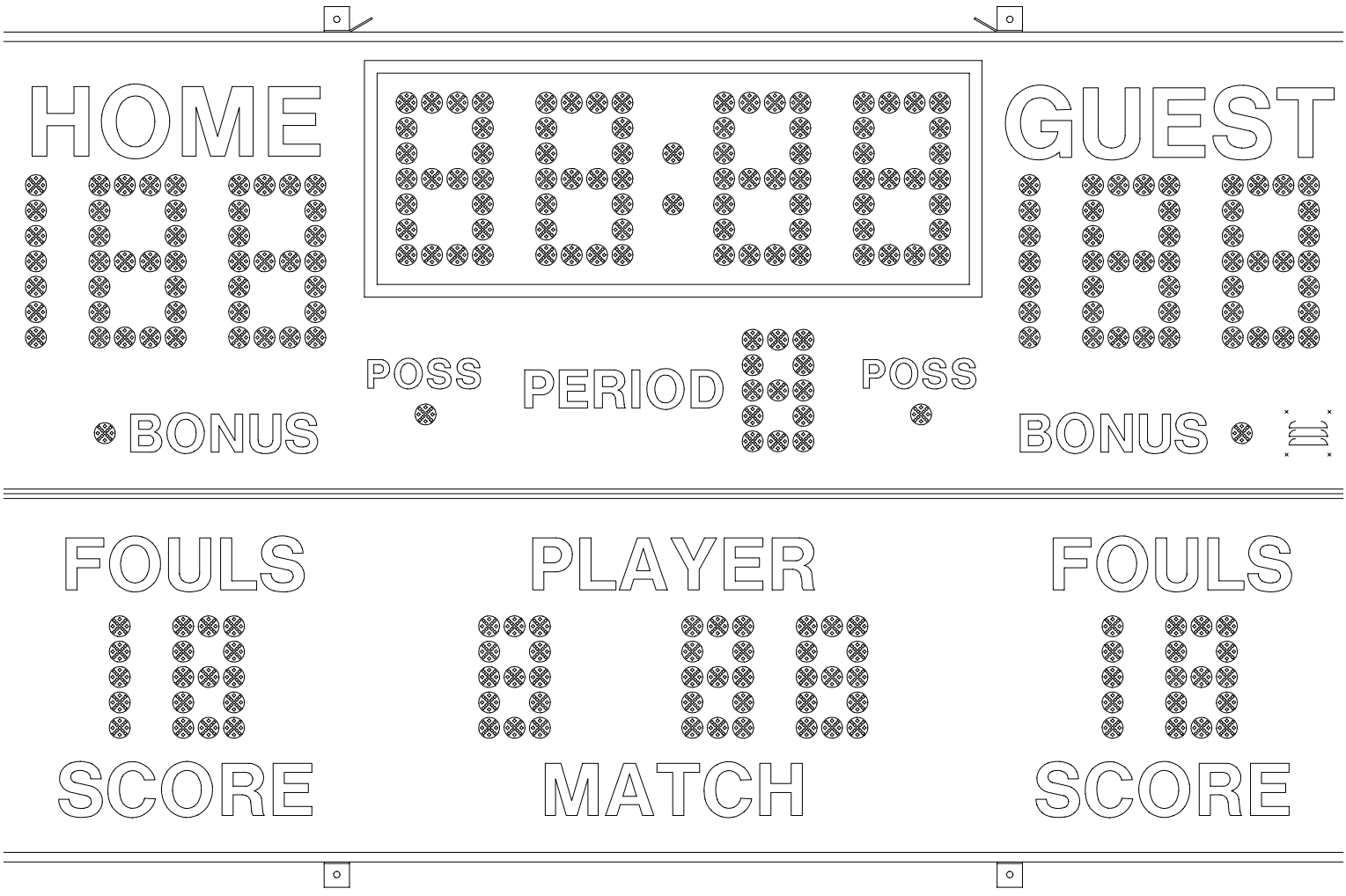
ALL AMERICAN SCOREBOARDS

A Product of Everbrite 401 S. Main St. Pardeeville, WI 53901 (608)429-2121 / (800)356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL

BASKETBALL SCOREBOARD

MODEL MP-4214 With MP-4000 Control



EFFECTIVE S.N. 15425, MARCH 5, 1999

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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

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 Basketball Display
1 ea Control Console
1 ea Service Manual
1 ea Wall Junction Box
? 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, and fittings that may have loosened in shipment.

2.3 Pre-Test

Before installing the scoreboard, pre-test all functions.

(A) Connect the scoreboard to a 15 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 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 **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 circuit to the scoreboard. The scoreboard will cycle through a self test mode where it tests all the LED pixels. During the self test mode the pixels will be going on and off. After the self test the scoreboard will blank all figures.

3.2 Console Display

The 2 line by 20 character Liquid Crystal Display module displays the scoreboard information entered from the keyboard. The following information is displayed during normal operation: Time, Home and Guest scores, Home and Guest Team Fouls, Period, Home and Guest Bonus, Ball Possession, Auto Horn Enable, and 1/10 Second Enable.

3.3 Console Power

Plug the hand held remote control into the scoreboard control console.

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 console display should show as follows.

```
MULTISPORT CONTROL
MP4000 VER 5.5  1999
```

3.4 To Use Scoreboard

Enter the two digit code (58) shown in the lower right corner of the keyboard as in the following example:

Push **CODE** **5** **8** **ENTER**.

When the proper code has been entered, the console display will show as follows.

```
0          :00       0
0 H                  0
```

Home and Guest scores will now show "0", and the timer will show ":00".

3.5 TIME OF DAY TIMER

To set the scoreboard for Time of Day; push **SET TOD**.

The LCD display should read as follows:

TIME OF DAY =

Push the keys for the current time, and then push **ENTER** .

Now push **DISPLAY TOD** **ENTER** .

The scoreboard will now display Time of Day.

If desirable, you may disconnect the control console and put it away.

If at this time you want to use the scoreboard for a ball game, input the code and it will be set for the game.

After the game, if you push **DISPLAY TOD** **ENTER** , you may disconnect the control, the scoreboard will again show the time of day.

3.6 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 an arrow up symbol is displayed next to the time on the LCD display. If in the DOWN mode there is no arrow displayed.

Switching the time toggle switch to the IN and OUT position, starts and stops the timer.

Push **RESET** to return the timer to the previously set value.

3.7 Final Minute 1/10 Second Option

The control console is capable of displaying 1/10 second during the final minute of the period.

Push **FINAL MIN 1/10** to enable the scoreboard to display the 1/10 second during the final minute of the period. A 'E' is displayed on the LCD to indicate this function is enabled.

The scoreboard timer digits shift two positions to the left in the final minute of play

and 1/10 seconds are displayed.

Push **FINAL MIN 1/10** again to disable this function.

3.8 Team Scores

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

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

(B) To add 2 to the existing score: Push **+2**.

(C) To add 3 to the existing score: Push **+3**.

(D) 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** .

(E) To clear the score: Push **SCORE** **0** **ENTER**.

3.9 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.

The automatic horn function may be disabled by using the **AUTO HORN** key.

An 'H' is displayed on the LCD when this function is enabled.

3.9 Bonus Indicators

Push Home or Guest **BONUS** to illuminate the appropriate bonus indicator. A '<B' or 'B>' will be displayed when the bonus is illuminated.

3.10 Period Indicators

Push **PERIOD** once to increment the period indicator. The LCD display will show the period directly below the time.

3.11 Timeout Period

An automatic timeout period of 1 minute is provided for "Time Outs" when the main

timer is not running.

Push: **TIME OUT TIMER** to start the 1 minute timer. The LCD will show "TIME OUT = 1:00" and start to count down. When 1 minute has elapsed the internal beeper sounds, and the display returns to the current game time.

If you want to return to play before the Time Out Timer gets back to zero,

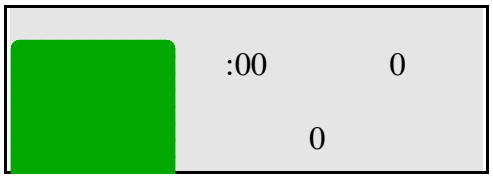
push: **CLEAR** and the console will return to play mode.

3.12 Ball Possession Indicator

The ball possession indicators alternate with each **BALL POSS** entry. The possession is displayed on the LCD with a '<P' or 'P>' to show Home or Guest possession.

3.13 Time Outs Left

When turned on, the LCD shows a little square box for Time Outs Left as indicated below:

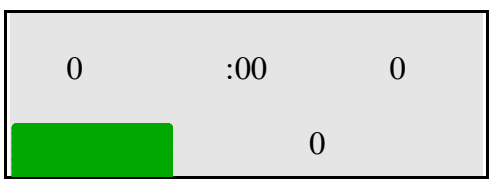


Push: Home **TIME OUTS LEFT**

The LCD will show:

Push: **3** **ENTER** .

The LCD will show:



The three horizontal marks equals 3 Time Outs Left.

The next time out, if you switch the time switch to time out, and push home or guest time Out, it will start the time out timer and subtract a time out from the home or guest team. At the end of the one minute Time Out period the LCD will go to game time and be ready to go. If you wish to start the game again before the one minute Time Out period ends, just push clear and the LCD will again go to the game display.

3.14 Team Fouls

The Home and Guest team fouls are entered in the same manner as the home and guest team scoring direct entry method.

Example: Present guest team foul is 3. Change to 4.

Key in Guest **FOUL** **4** **ENTER** .

The control display will now show game time, and the scoreboard display will show 4 team fouls for the guest team.

3.15 Player Number and Player Fouls

The player number and player fouls information is entered as in the following example:

If player number 25 gets a foul;

Push **PLAYER NO.** **2** **5** **ENTER** **1** **ENTER** .

The control console memory will store the player numbers and fouls for 15 players for each team. This information may be viewed on the LCD display at any time.

This information is now stored in memory. To view the information, push **HOME STATS** or **GUEST STATS** key. The first 8 player numbers entered, and their fouls are displayed.

Push the **HOME STATS** or **GUEST STATS** key a second time to display the next 7 player numbers and fouls. To return to normal game display,

push **GAME DISPLAY** .

To clear a player number/foul from memory: push, **PLAYER NO.** followed by the number you want to clear, then **ENTER** **CLEAR** .

3.16 Wrestling Operation

When using the MP-4214 scoreboard for wrestling, replace the basketball slipsheet with the wrestling slipsheet, The code is 60 for wrestling. All keyboard entries are made in the same way as for basketball, with the following exceptions:

The console LCD display shows; time, home and guest score, home and guest bout scores, period, weight class, and auto horn enable continuously.

The **+1** , **+2** , and **+3** keys now control the bout scores instead of team scores.

To enable the advantage timer, push: **ADV SET** **0** **0** **ENTER** .

Use the home or guest **ADV** key to control who has the advantage.

When the main timer is running, the **ADV OFF** key will stop the advantage timer.

Pushing home or guest **ADV** will restart the timer.

Push **ADV CLEAR** to clear the timer back to :00.

3.17 Volleyball Operation

When using the scoreboard for volleyball, replace the console slipsheet with the volleyball slipsheet. The code is 70 for volleyball. Operation of all keys is similar to basketball operation.

The console LCD display shows; time, home and guest score, home and guest games won, game, serving, and auto horn enable continuously.

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.

> **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 always remove power before removing the cover or replacing assemblies.

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) 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 10 VAC or greater contact the customer service department.

If the voltage is 0 VAC, plug the control console directly into the top of the scoreboard.

If the control works from the top of the scoreboard, recheck all cable connections and check continuity again.

If the control still does not work, check the cable connections to the receiver board (white and green wires).

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

If the voltage is 8 VAC or higher contact the customer service department.

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

(a) With the main power switch "off"; remove the cover over the power supply, and receiver.
(b) Check all connections.

(c) Turn the main power on.
(d) Turn the control console on and enter the code.

If LED D4 on the receiver board is flashing call the customer service department.

If LED D4 on the receiver board is not flashing, plug the control console directly into the top of the scoreboard.
If LED D4 on the receiver board flashes now check the junction box and data cable for continuity.

If LED D4 on the receiver board still does not flash, call the customer service department.

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

(a) With the main power switch "off"; remove the cover over the power supply, and receiver.
(b) Check all connections.
(c) Turn the main power on.
(d) If the scoreboard still doesn't light, check the voltage between the positive and negative terminal strips on the power supply for 12 VDC with a voltmeter set on the 12 VDC or higher scale.

If the voltage is 12 VDC or greater, go to (e).

If the voltage is less than 12 VDC check the power supply input voltage for 120 VAC and contact the customer service department.

(e) Check if LED D7 on the receiver board is on.

If D7 is on, check if D5 and D6 are flashing and call customer service department.

If D7 is not on, check that the receiver board is plugged into the power supply and call the customer service department.

(E) The scoreboard works, but some digits do not change.

(a) Look at the digit wiring order table.
(b) Find the first digit in the wiring order that is not working.
(c) Check for 12 VDC at the digit.
(d) Reseat the data in and data out cable connectors.
(e) If the digit still doesn't work call the customer service department.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts

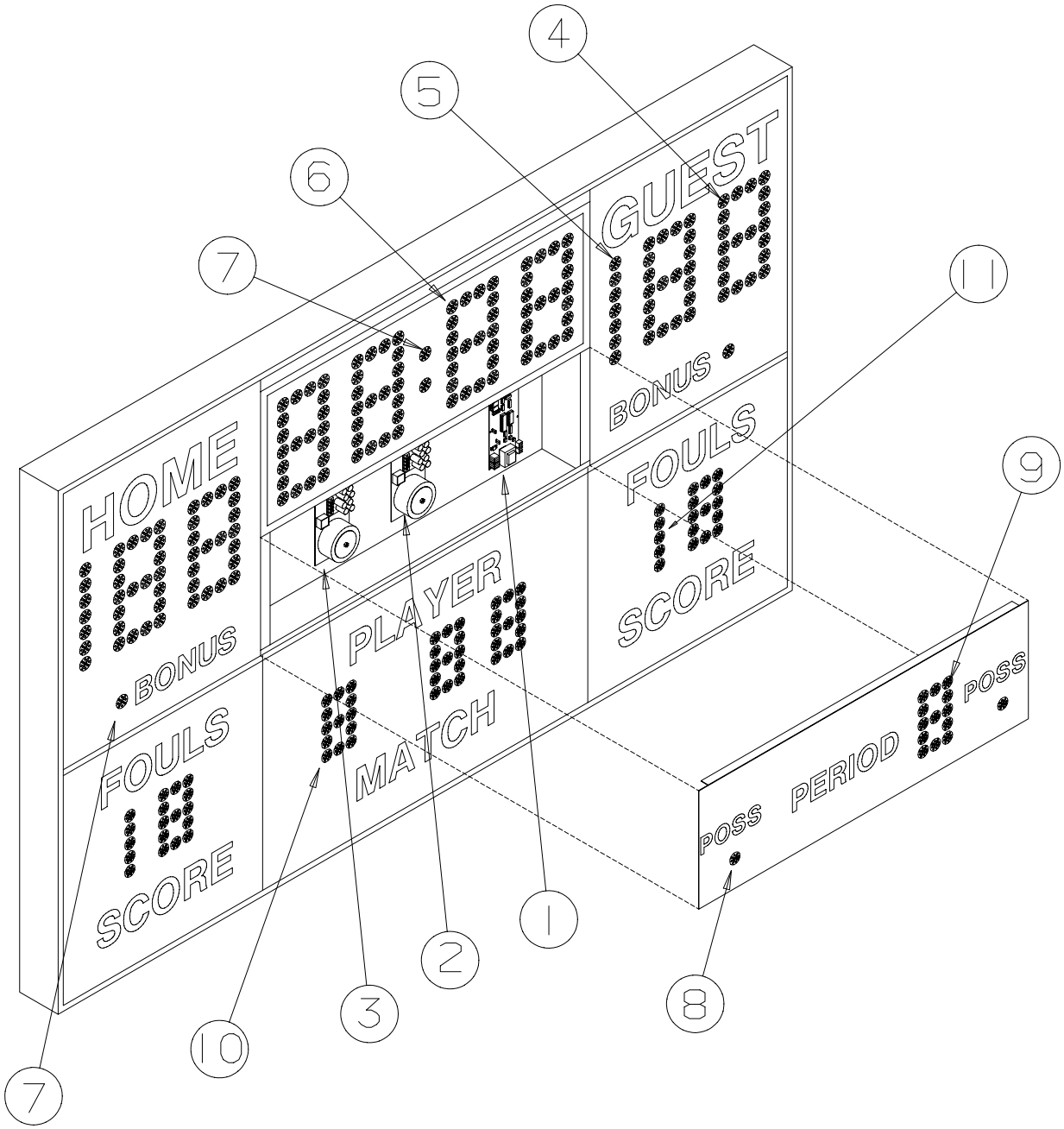


figure 1

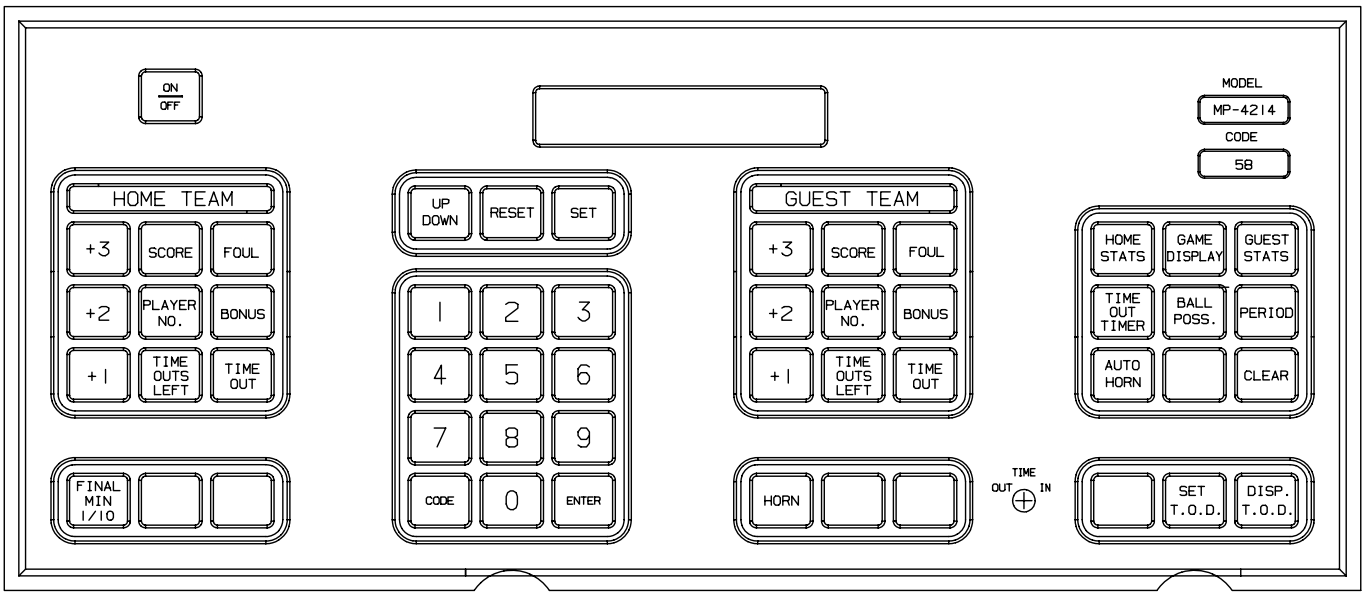
DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-4214 Basketball)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	150827	Display Assembly		150826
1-1	EL00351P	Receiver Board Assembly	A2	1048-9101A
1-2	BL00028P	Power Supply, 100 Watt		1048-9401
1-3	BL00027P	Power Supply, 200 Watt		1048-9402
1-4	EL00432P	Digit, 4 X 7 Green		1048-9205GI
1-5	EL00433P	Digit, 1 X 7 Green		1048-9204GI
1-6	EL00431P	Digit, 4 X 7 Red		1048-9205RI
1-7	EL00438P	Digit, 2 X 1 Red		1048-9201RI
1-8	EL00439P	Digit, 2 X 1 Green		1048-9201GI
1-9	EL00436P	Digit, 3 X 5 Green		1048-9203GI
1-10	EL00434P	Digit, 3 X 5 Amber		1048-9203AI
1-11	EL00437P	Digit, 1 X 5 Green		1048-9202GI
1-12	119337	Line Filter, Mallory		20VB1
1-13	151625	Cable Assembly, Telehone 12"		151625
1-14	151626	Cable Assembly, Telehone 18"		151626
1-15	151627	Cable Assembly, Telehone 24"		151627
1-16	151631	Cable Assembly, Telehone 48"		151631
1-17	151633	Cable Assembly, Telehone 60"		151633
1-18	151635	Cable Assembly, Telehone 72"		151635
1-19	703609	Horn, 350N		703609
	151680	Control Console		151680
	151684	Slipsheet Pair		151684
	151681	Transmitter PCB Assembly	A1	151681
		***** PROGRAM 4000 TX.541 *****		
	SW005100	Toggle Switch,	S1	SW005100
	930894	Connector, 6 Pin Male Cable	P1	RM12BPG6P
	EL057700	LCD Display, 2 Line 20 Character		
	151682	Keyboard Assembly,		151682

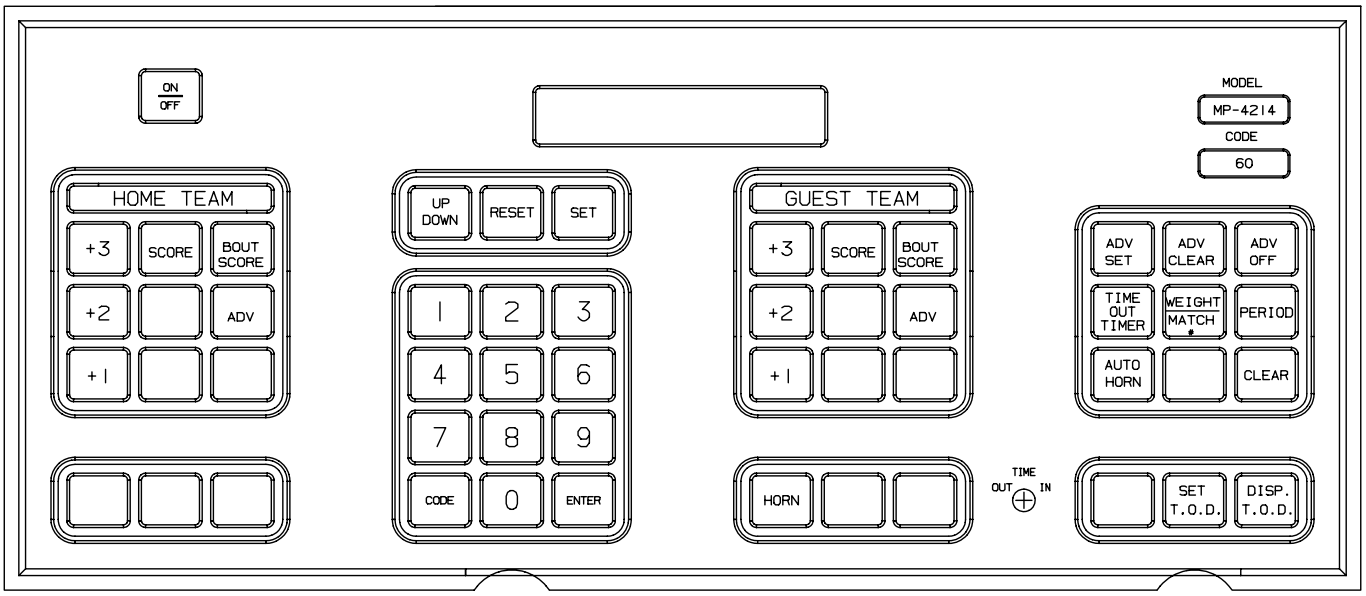
WH009100	Ribbon Cable Assembly, 14C 8"		WH009100
122763	Enclosure,		
150994	Wall Junction Box, Single		150994
930895	Connector, 6 Pin Female	J1	RM12BRD6S
150500	Cable, MP-41 Control		8723
150993	Wall Junction Box, Dual		150993
930895	Connector, 6 Pin Female	J1-J3	RM12BRD6S
150500	Cable, MP-41 Control		8723

6.1 Control Console Keyboard and Slipsheet Layout



1

for Basketball Operation



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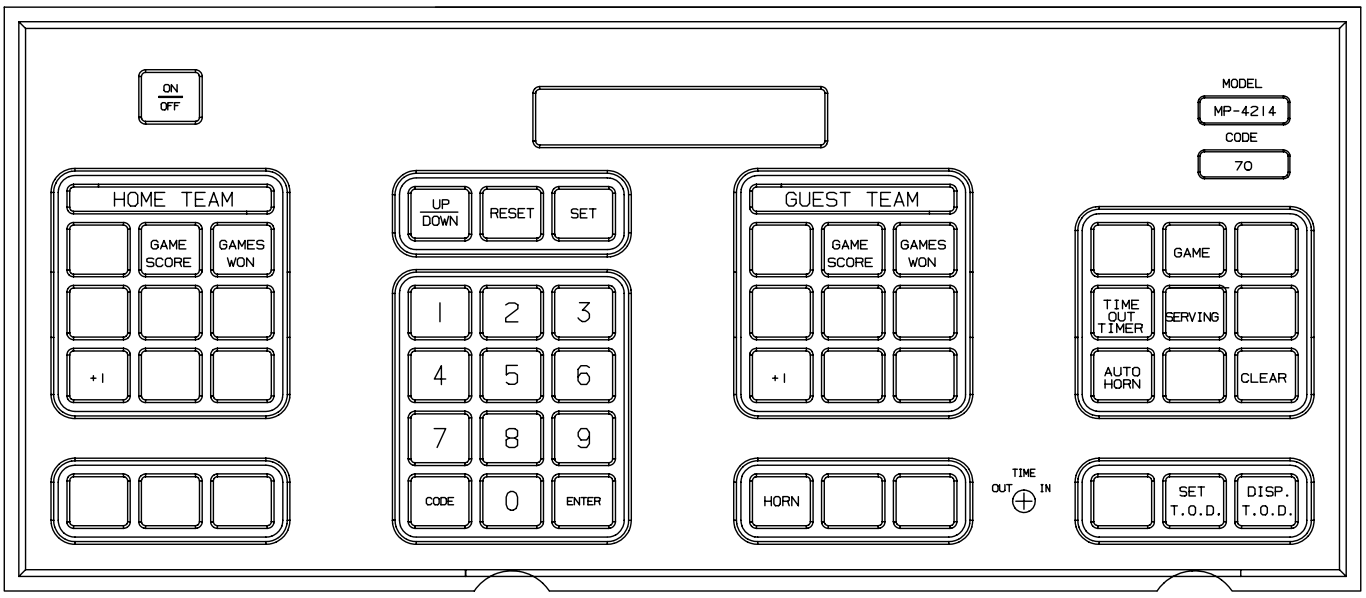
for Wrestling Operation

6.1 Control Console Keyboard and Slipsheet Layout (cont.)



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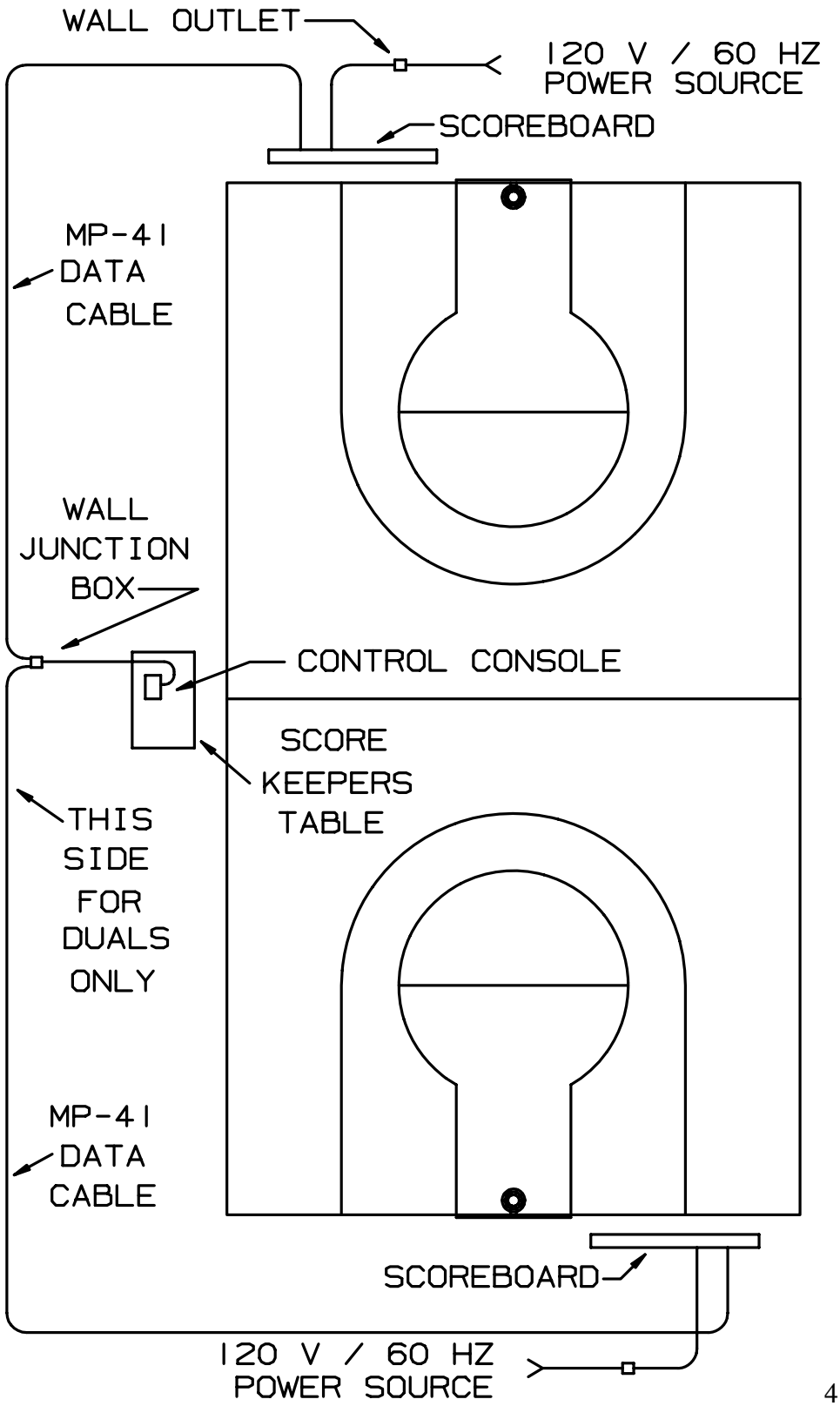
for Volleyball Operation

CONSOLE KEYBOARD

6.2 Scoreboard System Layout



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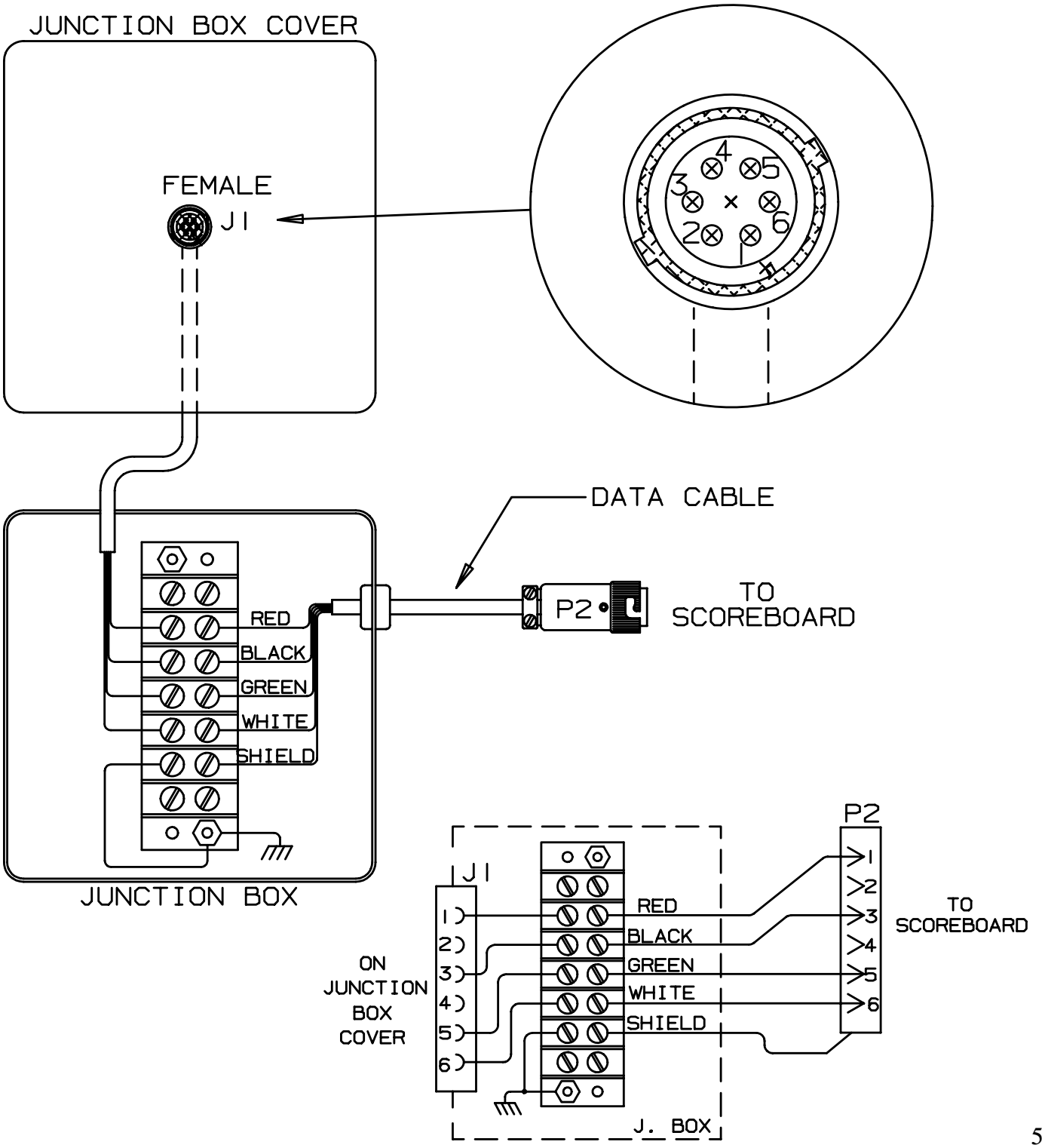
SYSTEM LAYOUT

6.3 Single Wall Junction Box Wiring



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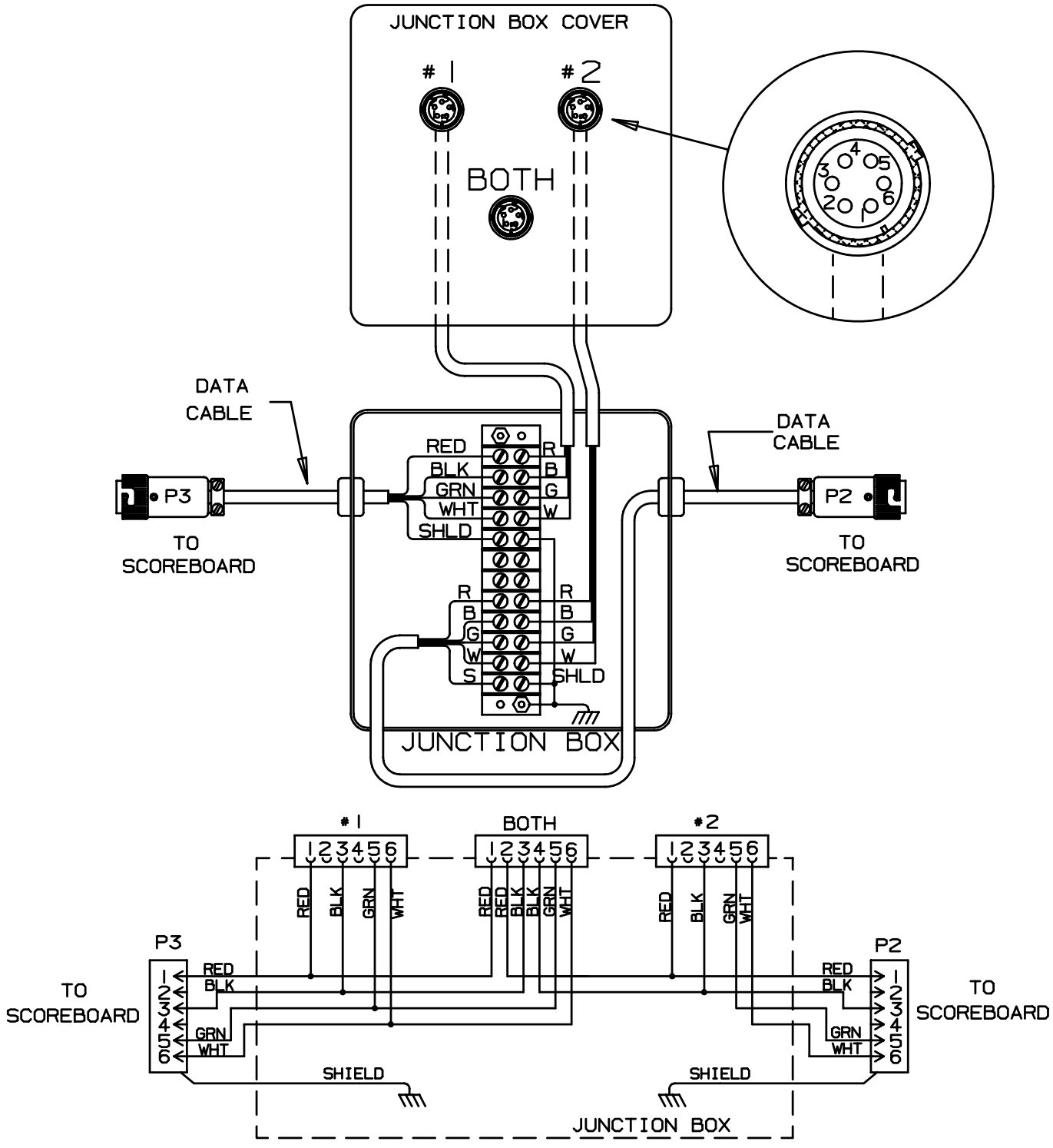
SINGLE JUNCTION BOX WIRING

6.4 Dual Wall Junction Box Wiring



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DUAL JUNCTION BOX WIRING

6.5 Figuregram Data Wiring Sequence Diagram

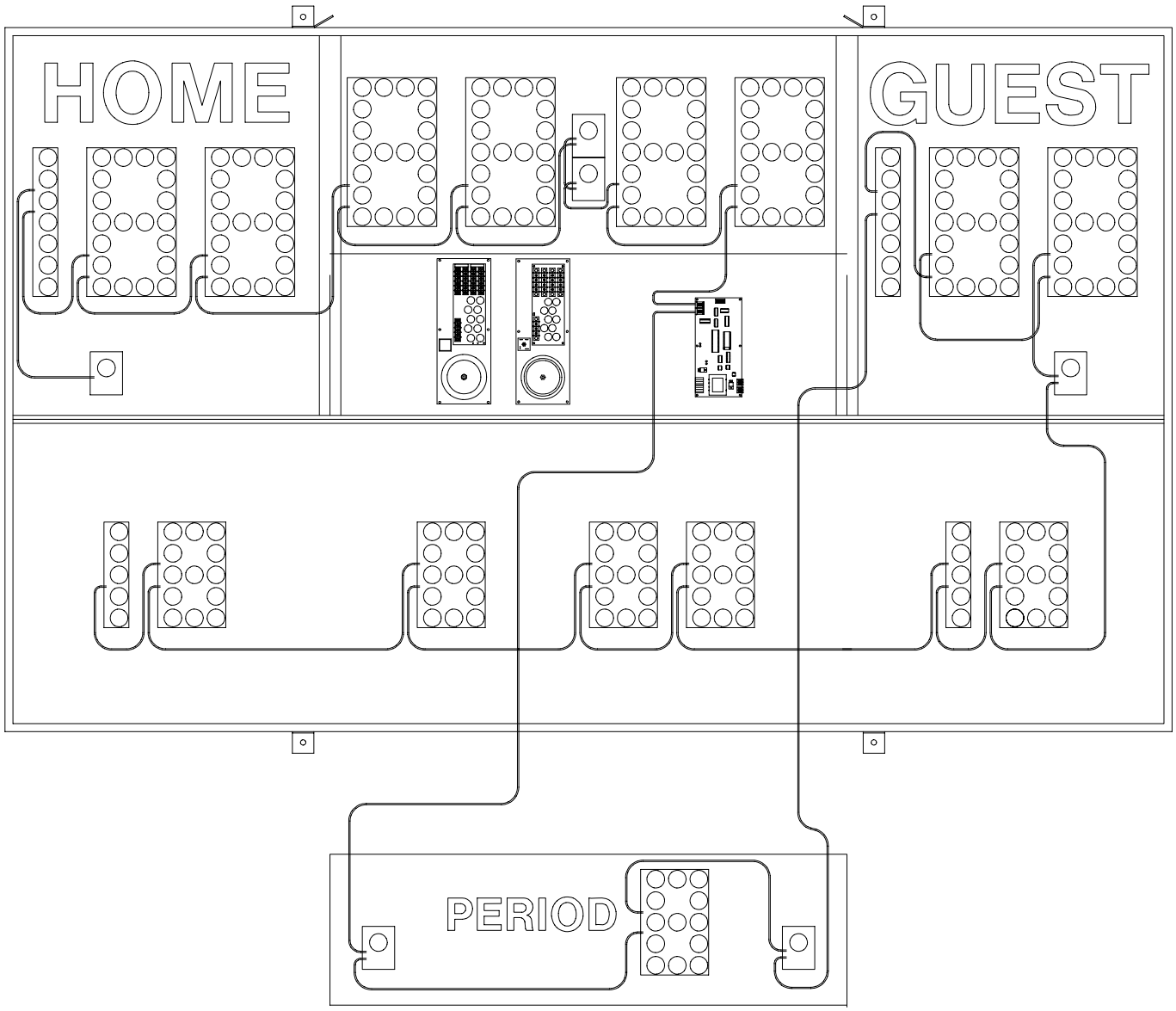

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FIGURE WIRING SEQUENCE

6.6 Figuregram Power Wiring Diagram

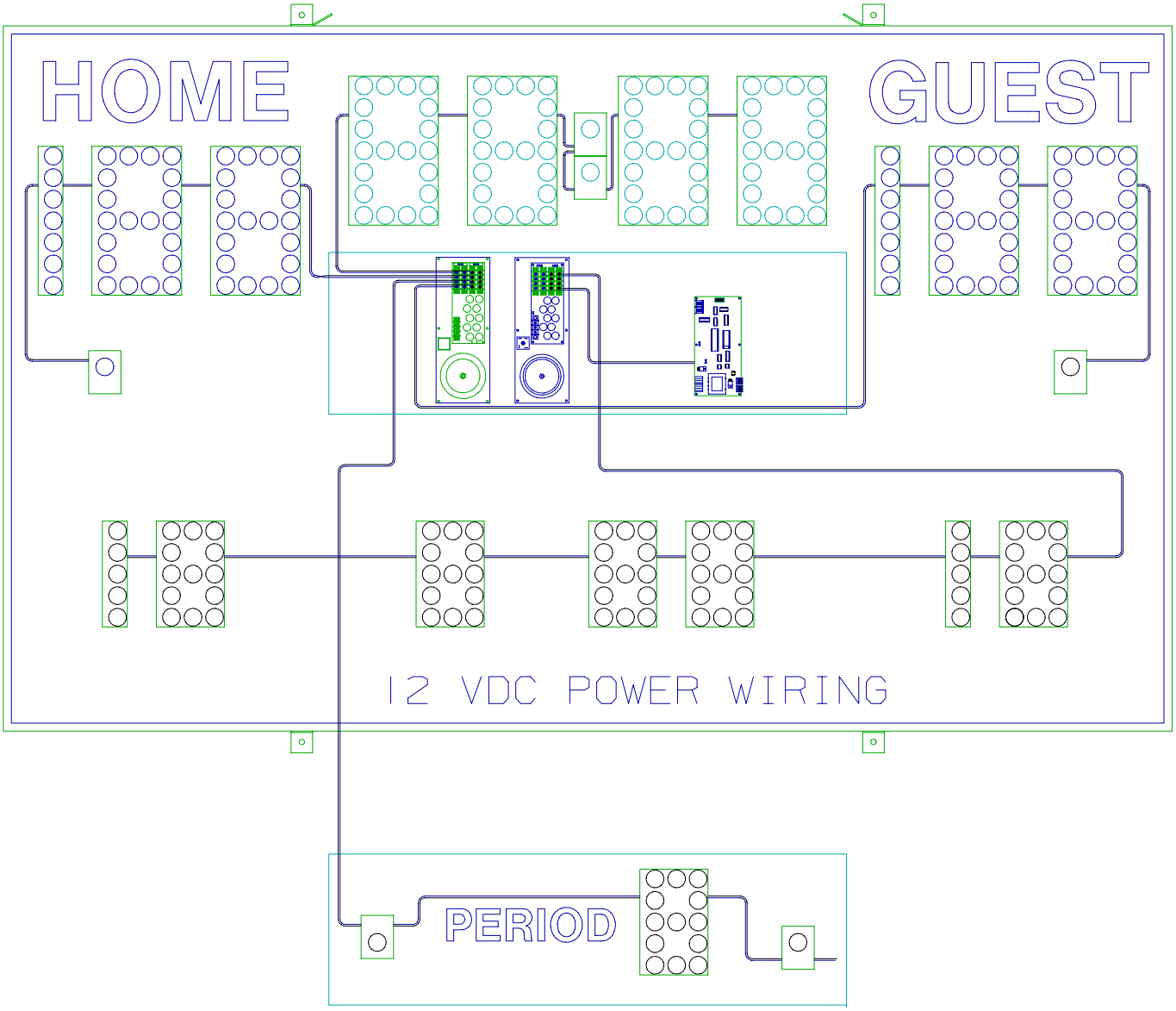

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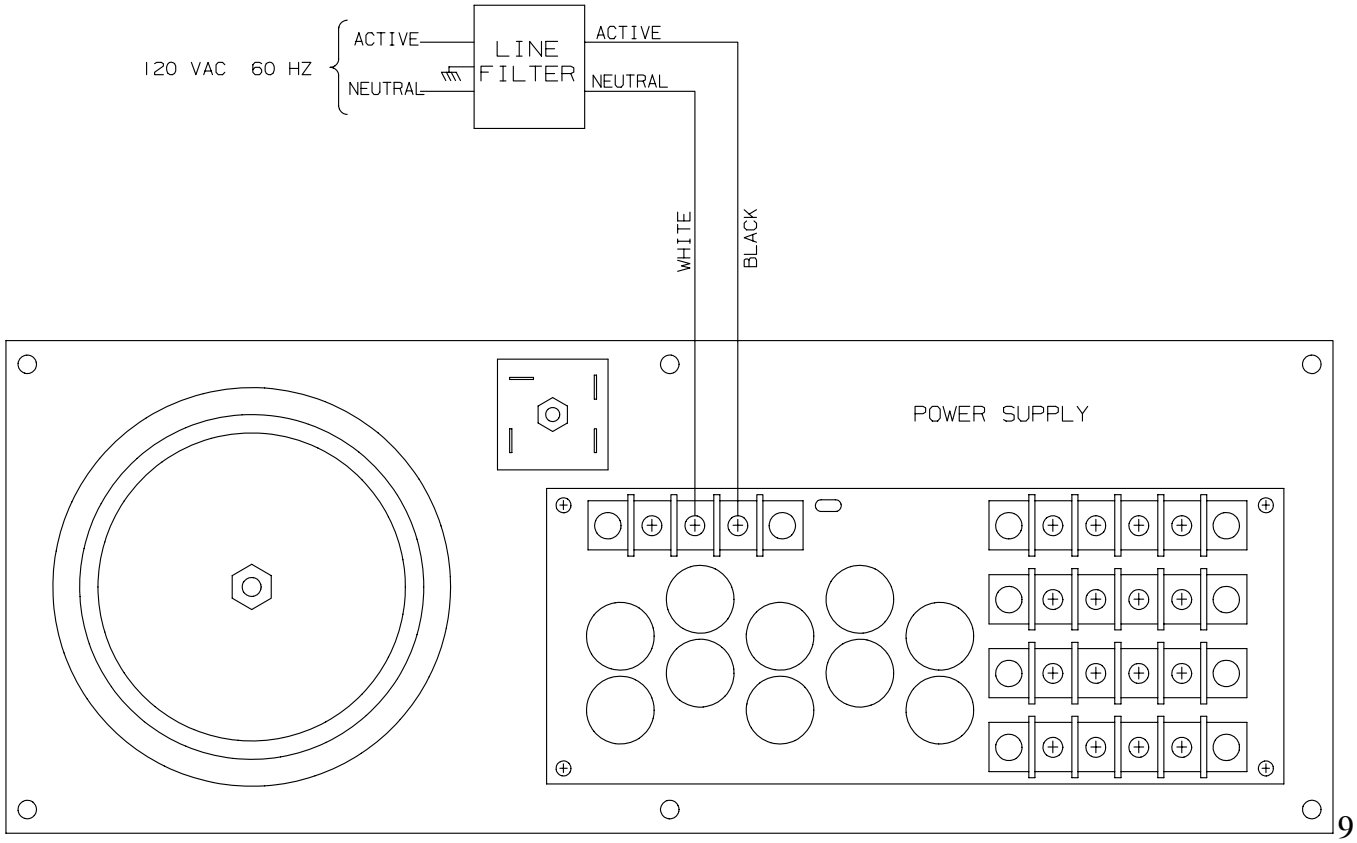
FIGURE WIRING SEQUENCE

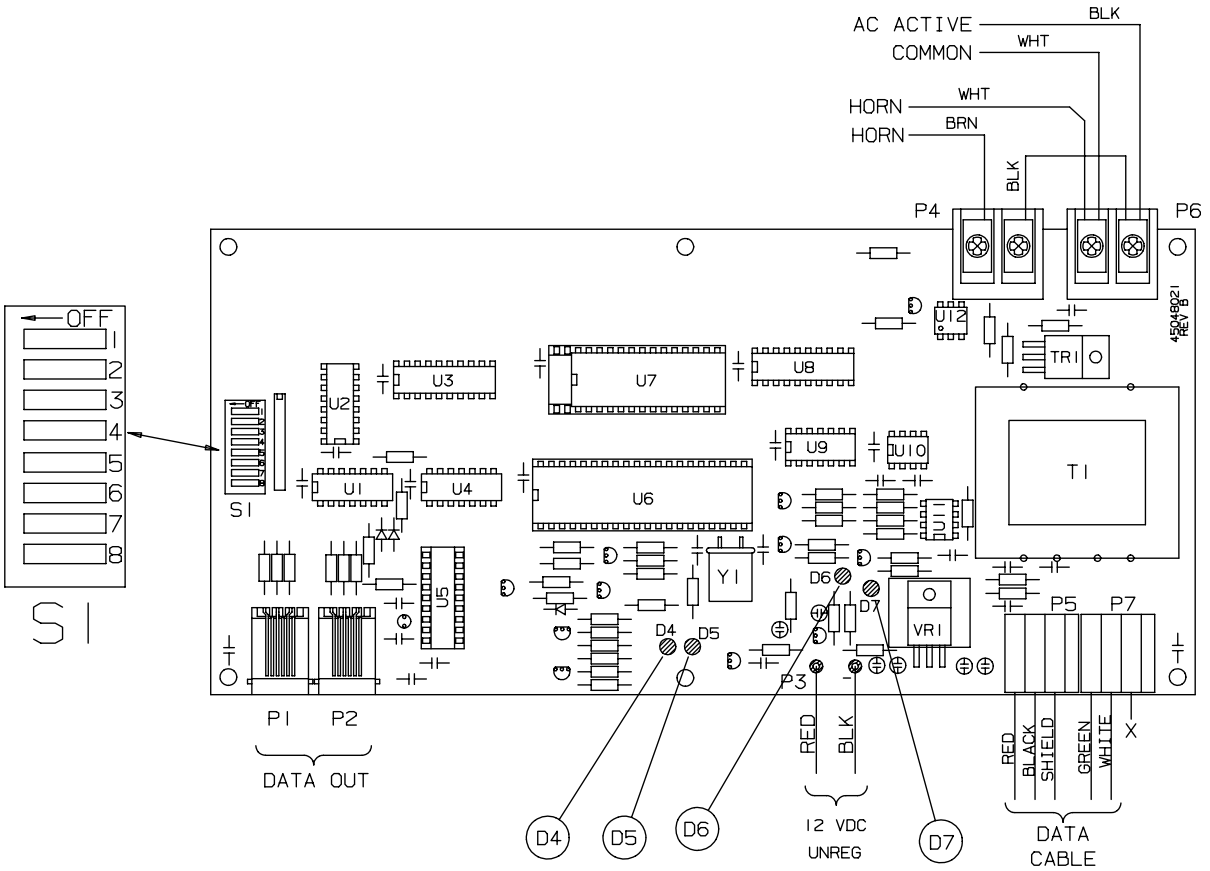
6.7 Power Supply Diagram



9

POWER SUPPLY

6.8 Receiver Board Diagram

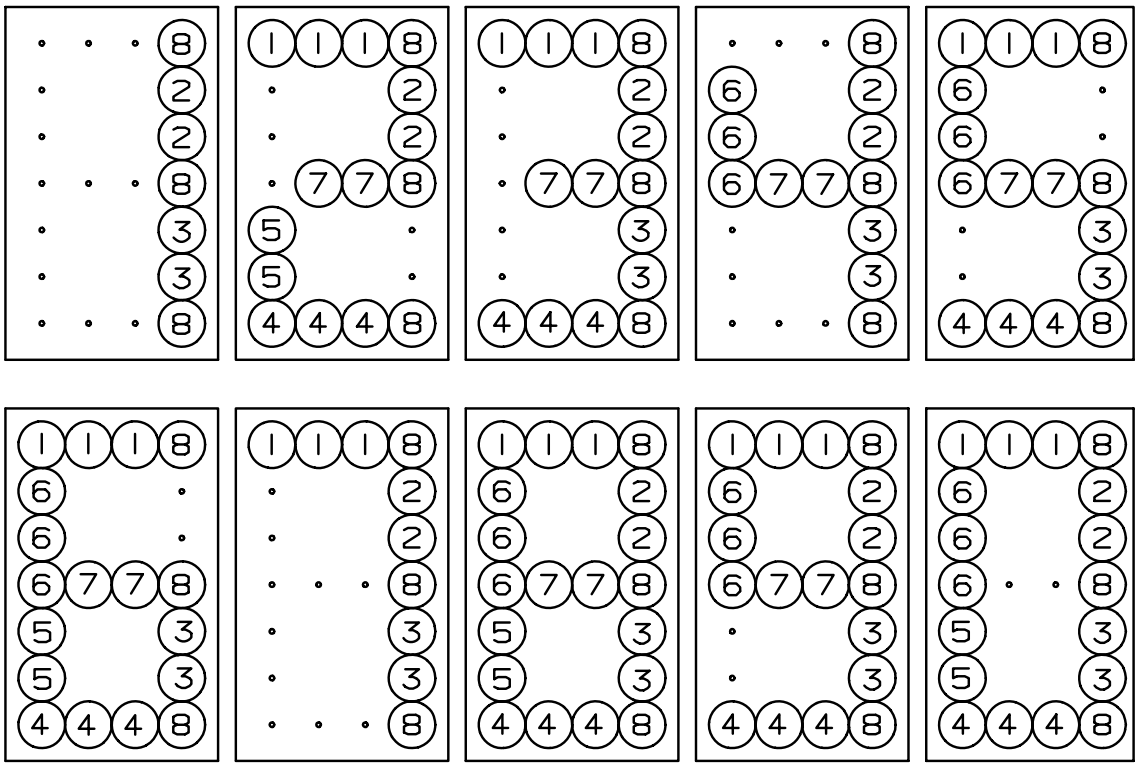


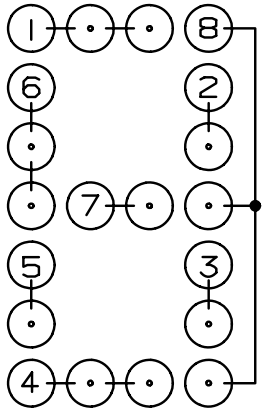
DIP SWITCH SETTINGS:	LED FUNCTIONS:
1 - On only when Rx is in SCBD 2 - On only when Rx is in shotclock 3 - Off (saved for future use) 4 - Off (saved for future use) 5 - Off (saved for future use) 6 - Off (saved for future use) 7 - When on causes number test, then goes to continuous segment test. 8 - When on causes number test, then bit test, then continuous number test	D4 - Flashes very dimly with power up. (Indicates clock output on P1/channel 1.) D5 - Flashes very dimly with power up. (Indicates clock output on P2/channel 2.) D6 - Lights continuously with power up. (Indicates that Rx has power.) D7 - Off until console is coded in. Then it flashes. (Indicates Rx is receiving data from control console.

Standard settings for DIP switches is all off except for 1 and 2.

RECEIVER BOARD

6.9 Microprocessor 4 X 7 LED 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

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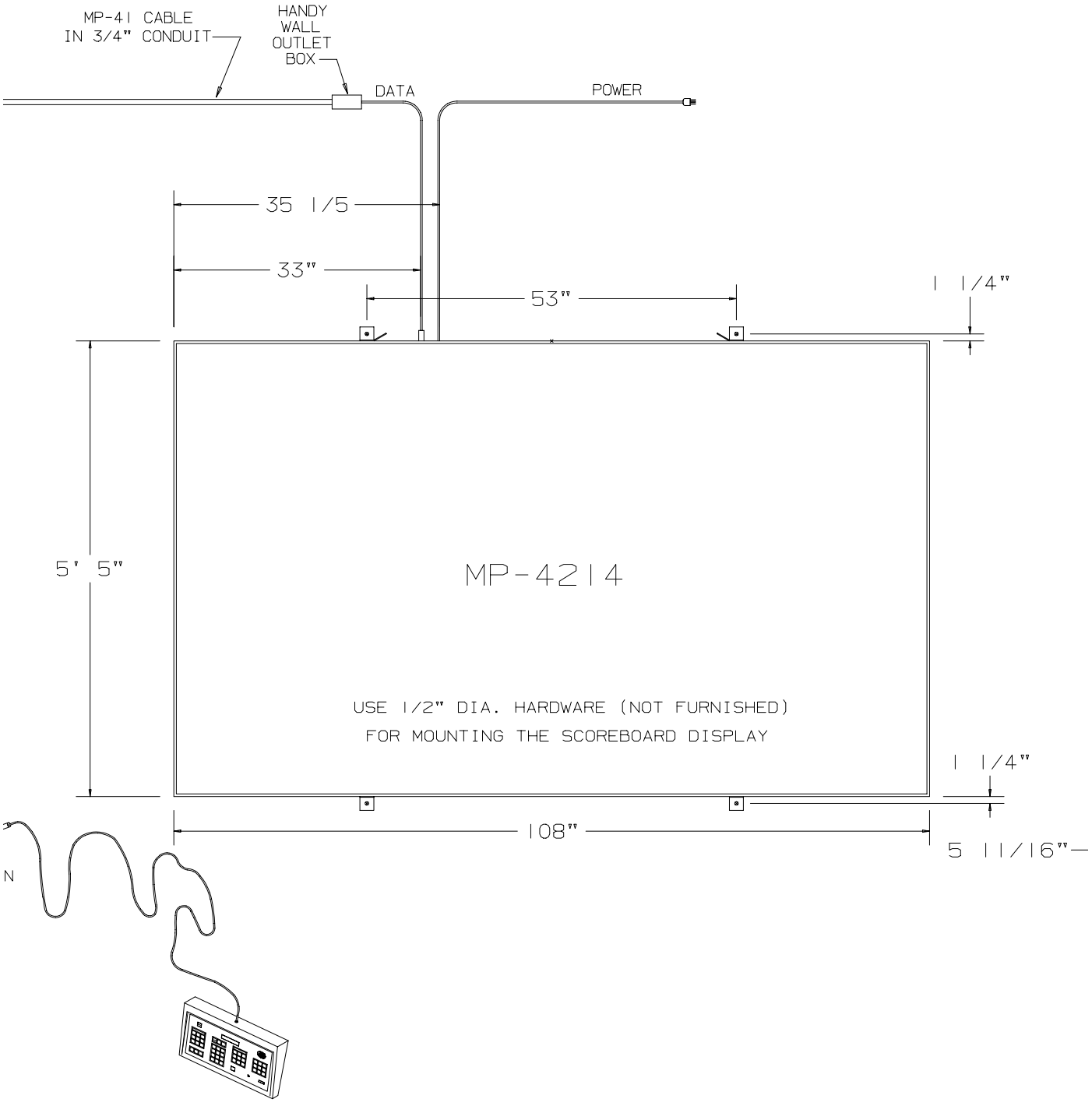
MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.10 Installation Drawing



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INSTALLATION DRAWING