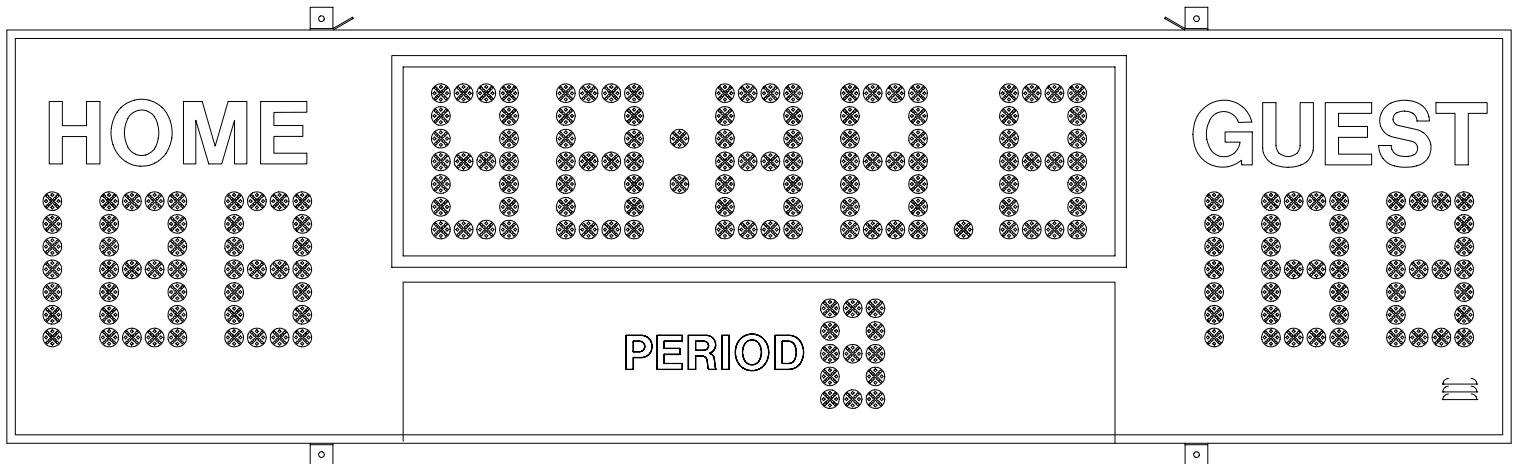




## OPERATING INSTRUCTIONS AND SERVICE MANUAL

### SWIMMING SCOREBOARD

MODEL MP-4702



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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 Swimming 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, Period, Auto Horn Enable, and 1/10 Second Enable.

#### 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 console display should show as follows.

**CLEAR 1= YES 2=NO**

Push: **1** **ENTER** .

The console display should now show as follows.

**MULTISPORT CONTROL  
MP4000 VER 4.0 1997**

#### 3.4 To Use Scoreboard

Enter the two digit code (80) shown in the lower right corner of the keyboard as in the following example:

Push **CODE** **8** **0** **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 Setting and Control

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.

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.

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

### 3.6 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.

### 3.7 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** **0** **ENTER**

### 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.

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.

### 3.10 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.

## 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.

**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.

#### 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) 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.

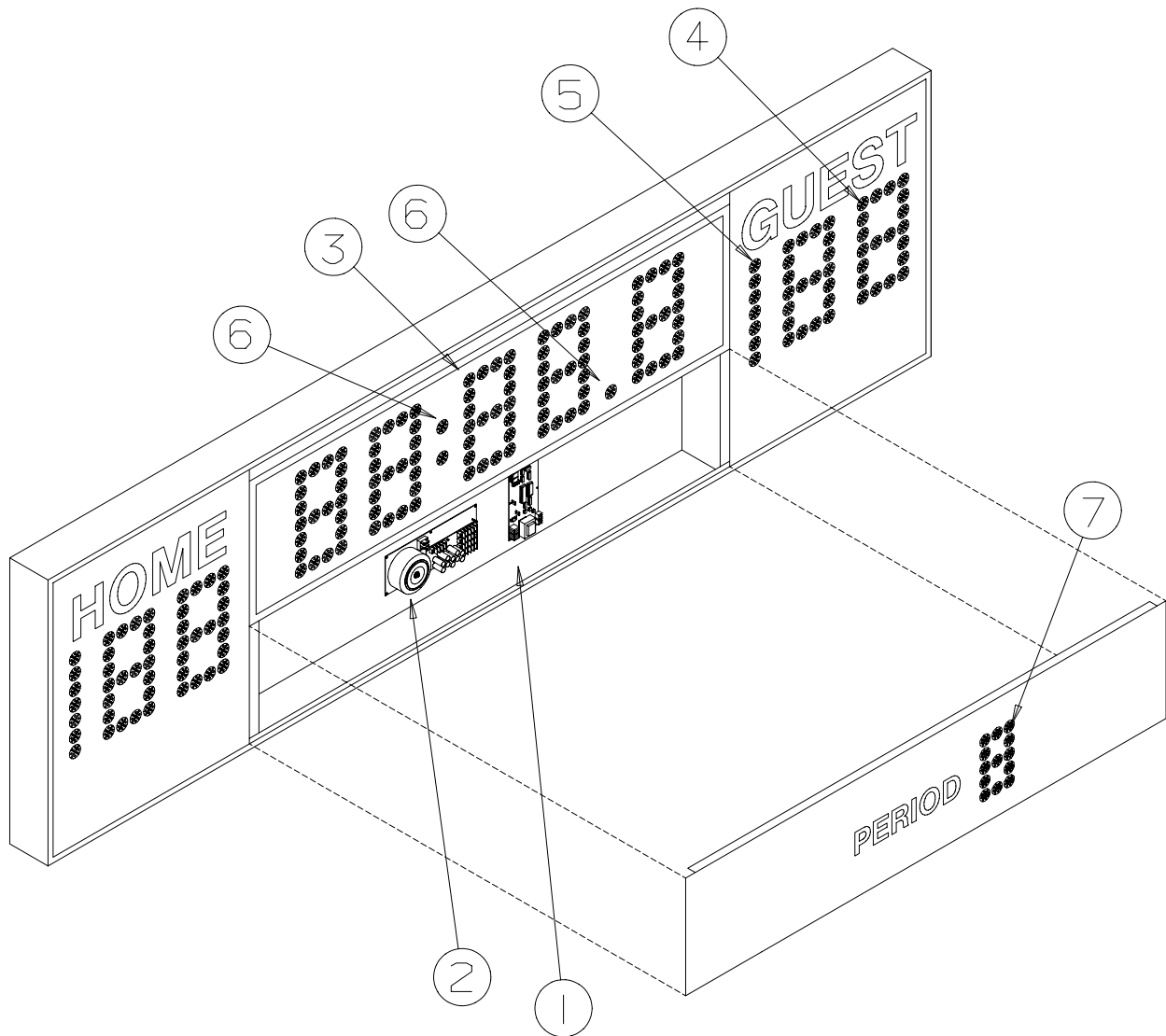
If D7 is not on, check that the receiver board is plugged into the power supply and call the customer service department.

- (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



1

figure 1

# DISPLAY ASSEMBLY

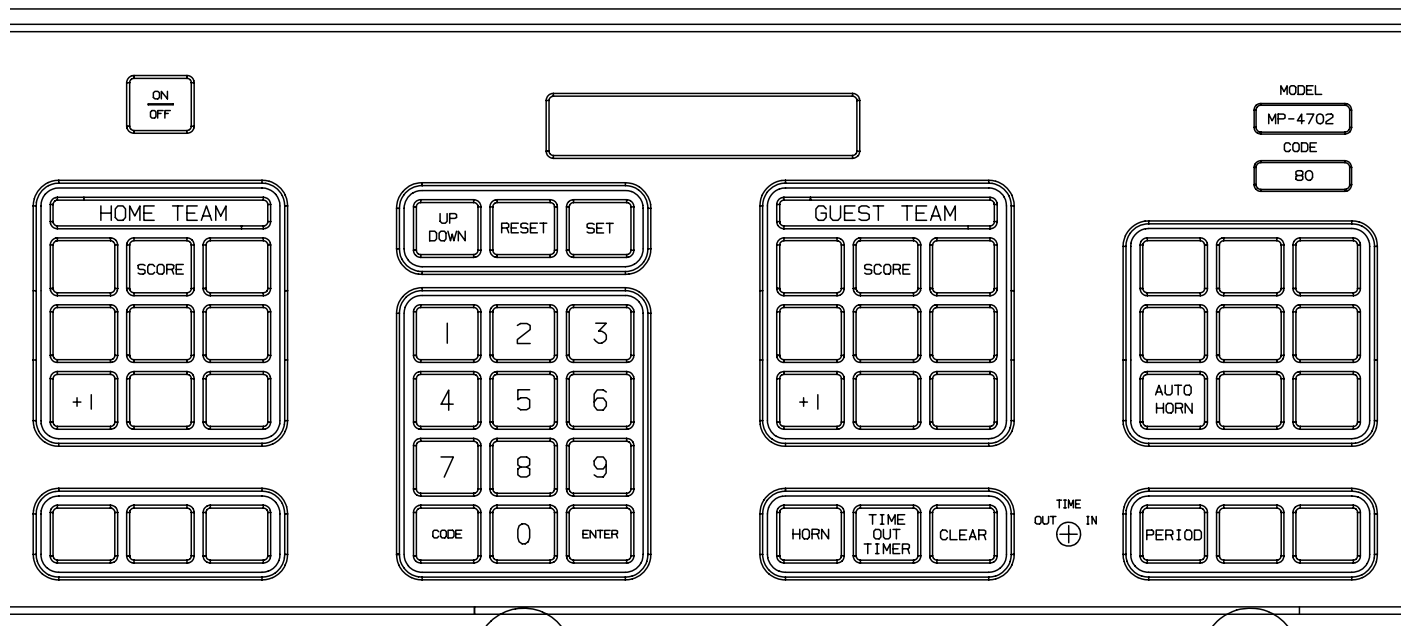
REPLACEMENT PARTS LIST (MP-4702)				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1- 1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9 1-10 1-11 1-12 1-13	150832 EL00351P BL00027P EL00251P EL00245P EL00246P EL00244P EL00249P EL00360P 119337 151627 151631 703609 150885	Display Assembly Receiver Board Assembly Power Supply, 200 Watt Digit, 2 X 1 Red Digit, 4 X 7 Green Digit, 1 X 7 Green Digit, 4 X 7 Red Digit, 3 X 5 Green Switch, DPST Rocker Line Filter, Mallory Cable Assembly, Telephone 24" Cable Assembly, Telephone 48" Horn, 350N Period and Service Panel	A2	150832 EL00351P BL00027P EL00251P EL00245P EL00246P EL00244P EL00249P 96F2128 20VB1 151627 151631 703609 150885
	151680 151684 151681 SW005100 930894 EL057700 151682 WH009100 122763	Control Console, MP-4000 Slipsheet Pair Transmitter PCB Assembly Toggle Switch, Connector, 6 Pin Male Cable LCD Display, 2 Line 20 Character Keyboard Assembly, Ribbon Cable Assembly, 14C 8" Enclosure,	A1 S1 P1	151680 151684 151681 SW005100 RM12BPG6P  151682 WH009100
	150994 930895 150500	Wall Junction Box, Single Connector, 6 Pin Female Cable, MP-41 Control	J1	150994 RM12BRD6S 8723
	150993	Wall Junction Box, Dual		150993

930895 Connector, 6 Pin Female  
150500 Cable, MP-41 Control  
700618 Diode, 1N457A

J1-J3 RM12BRD6S  
8723  
D1/D2 1N457A

## 6. DIAGRAMS

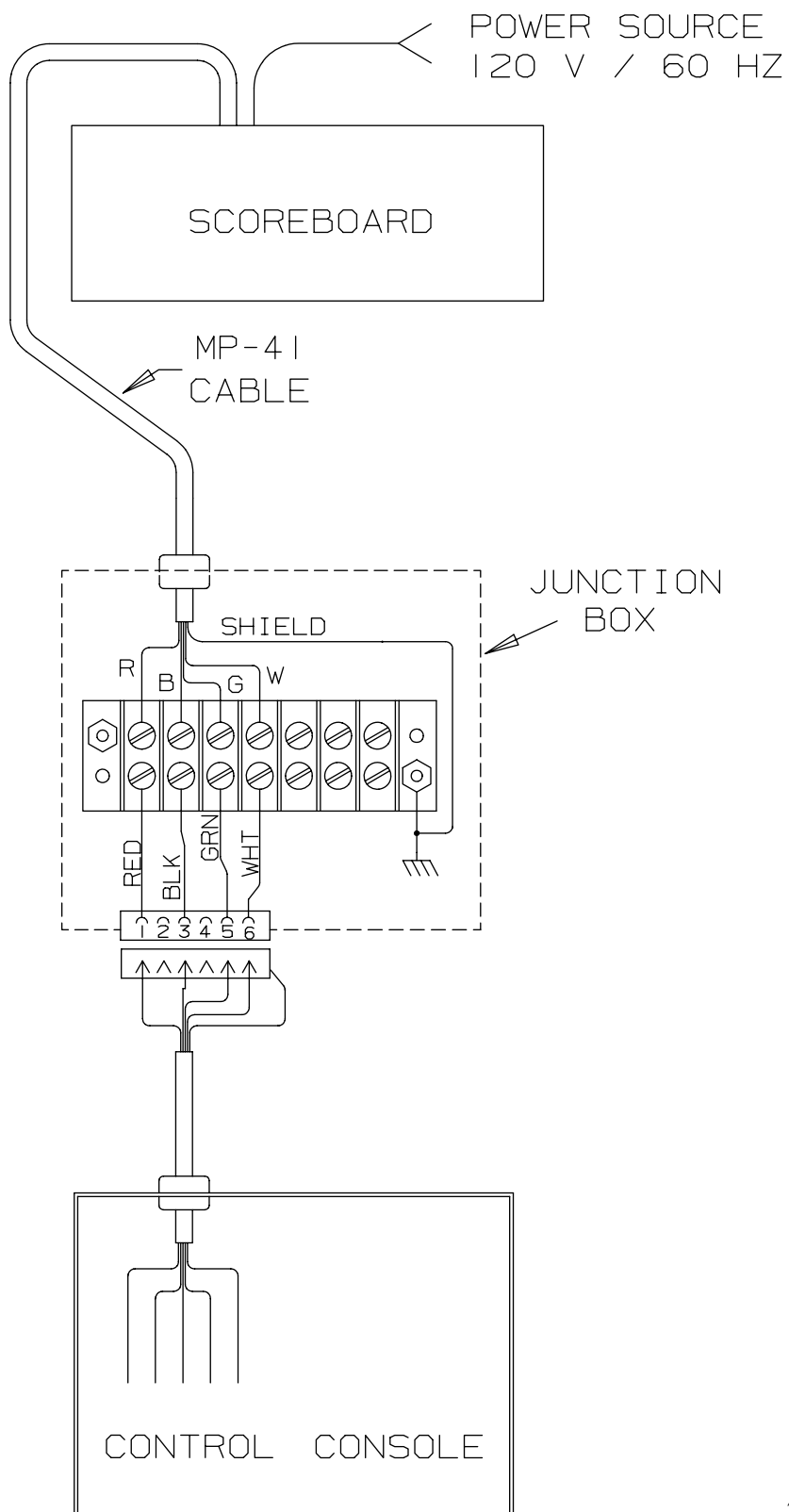
### 6.1 Control Console Keyboard and Slipsheet Layout



2

### CONSOLE KEYBOARD

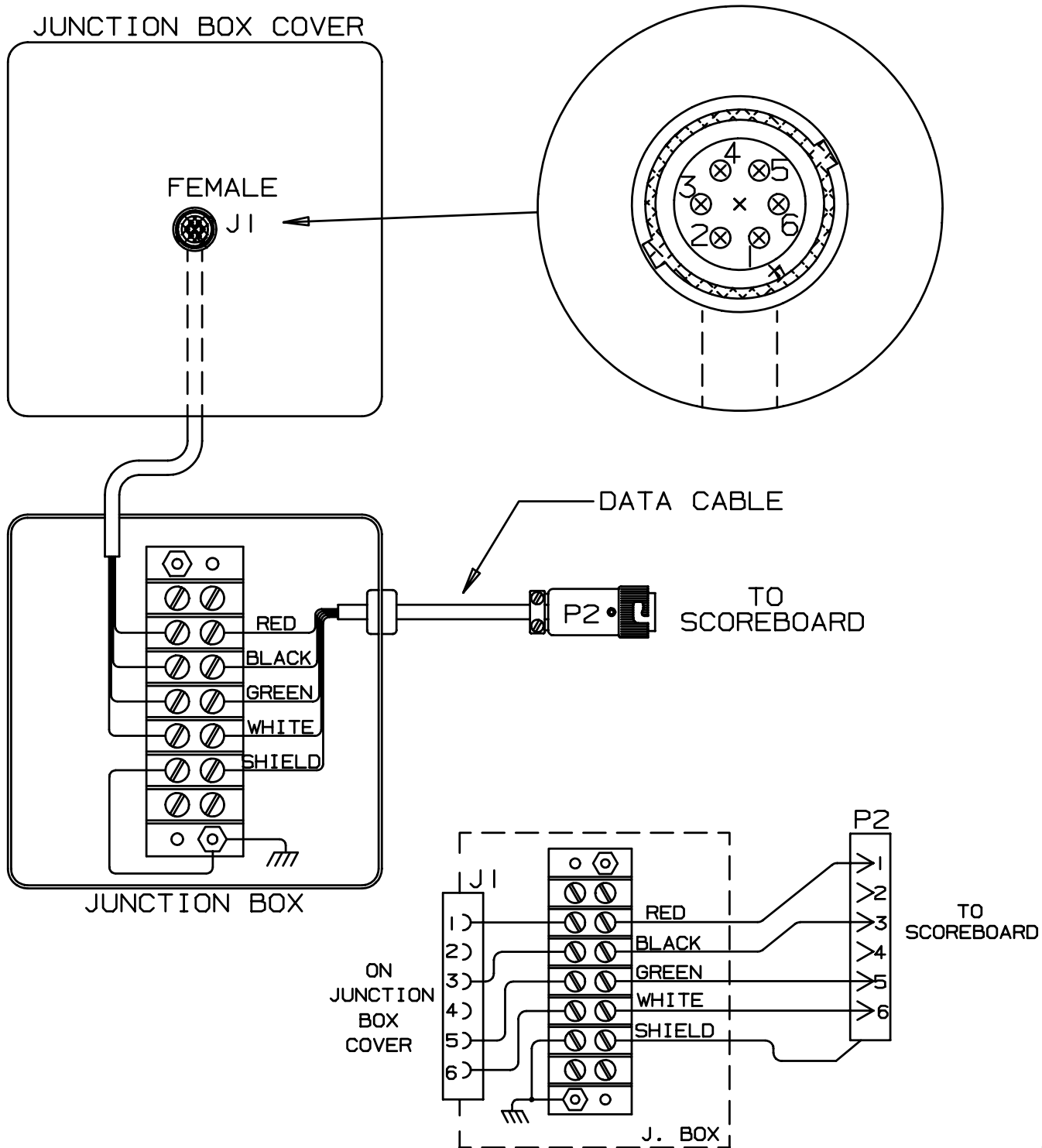
## 6.2 Scoreboard System Layout



SYSTEM LAYOUT

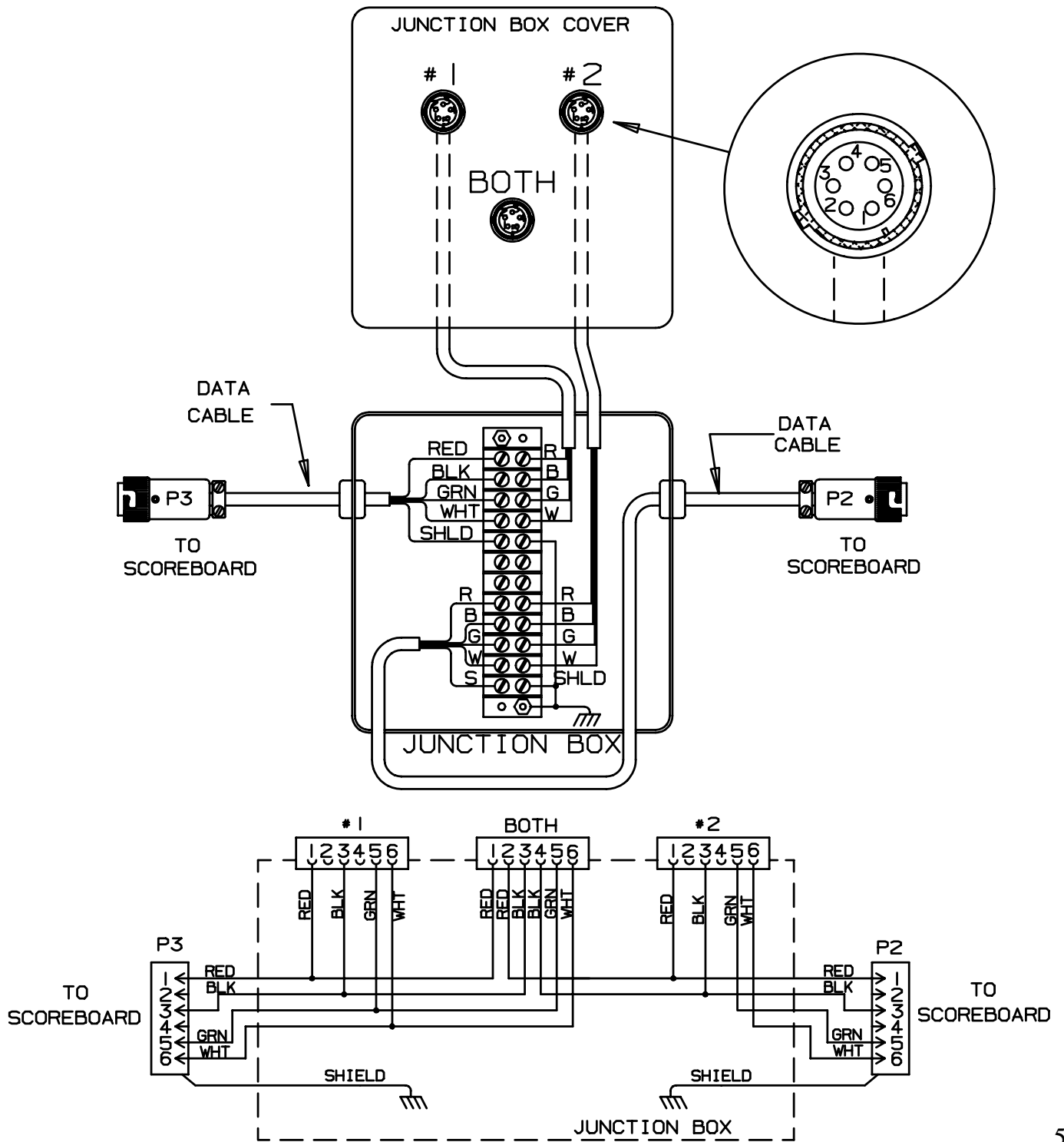
### 6.3 Single Wall Junction Box Wiring





SINGLE JUNCTION BOX WIRING

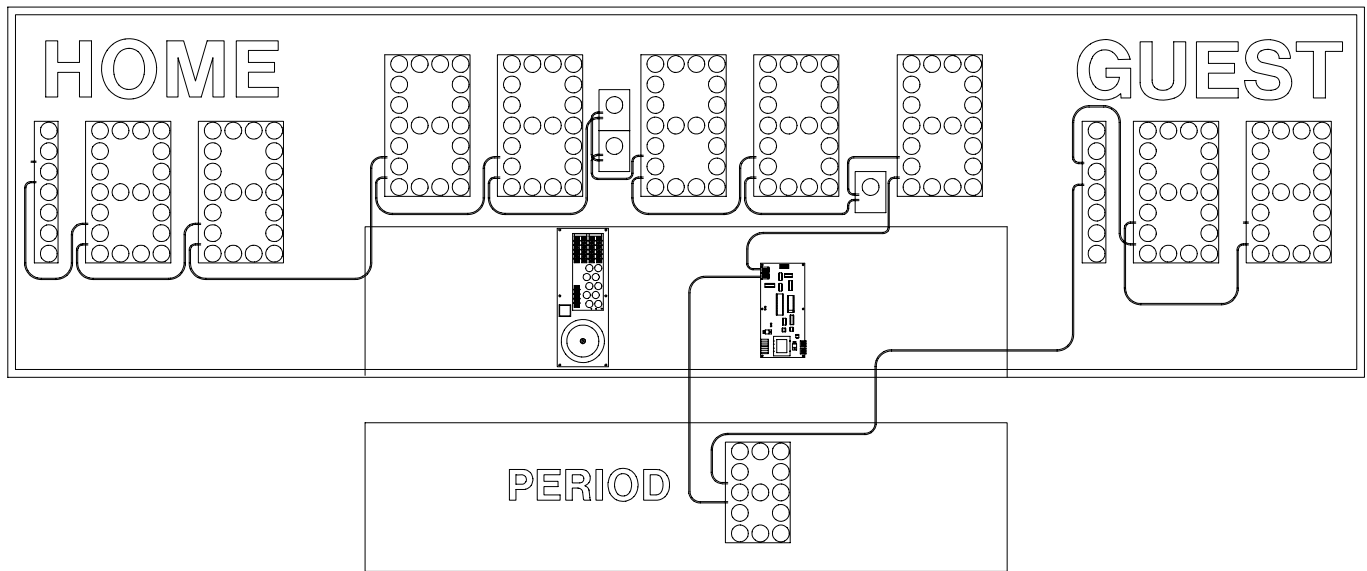
#### 6.4 Dual Wall Junction Box Wiring



5

DUAL JUNCTION BOX WIRING

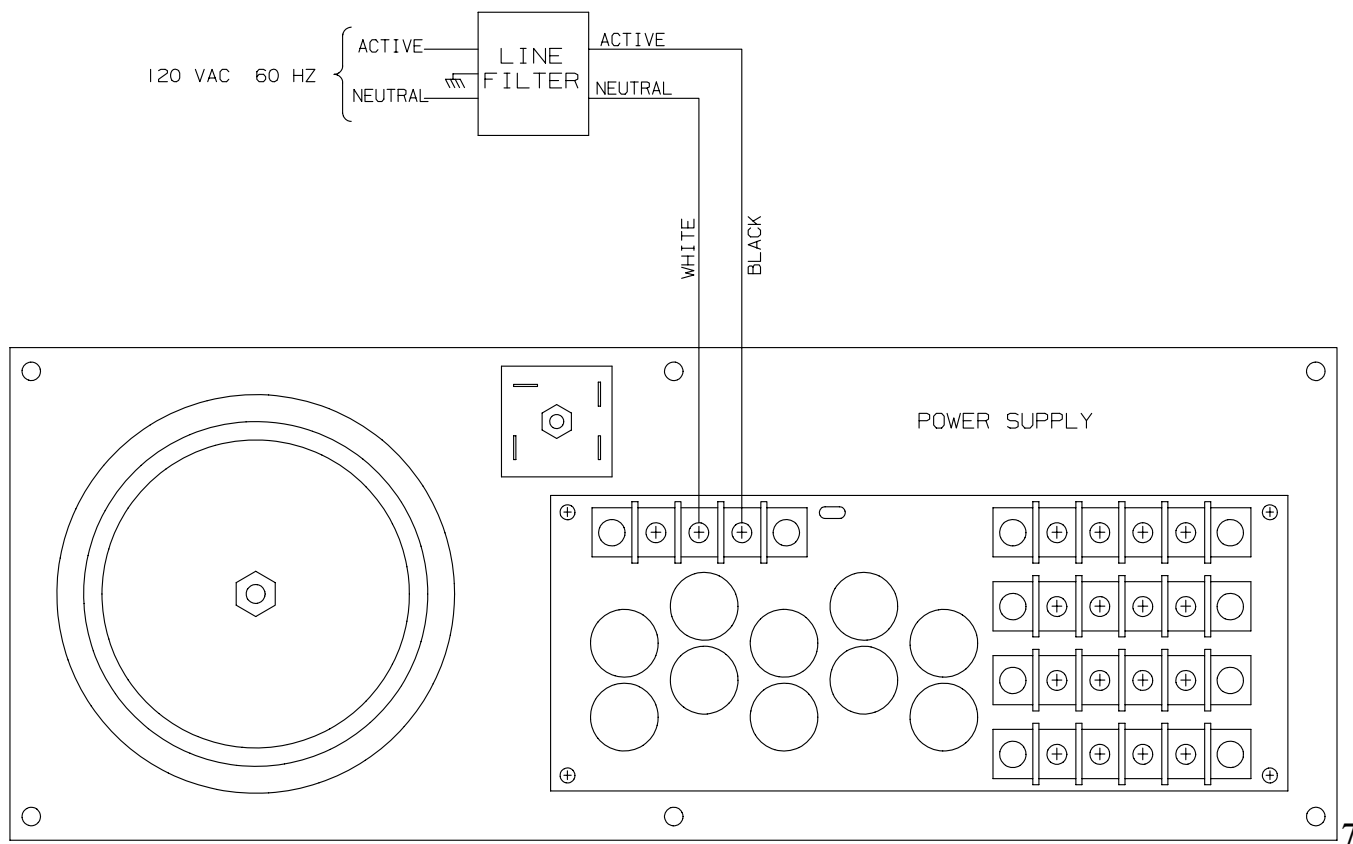
## 6.5 Wiring Order Diagram



6

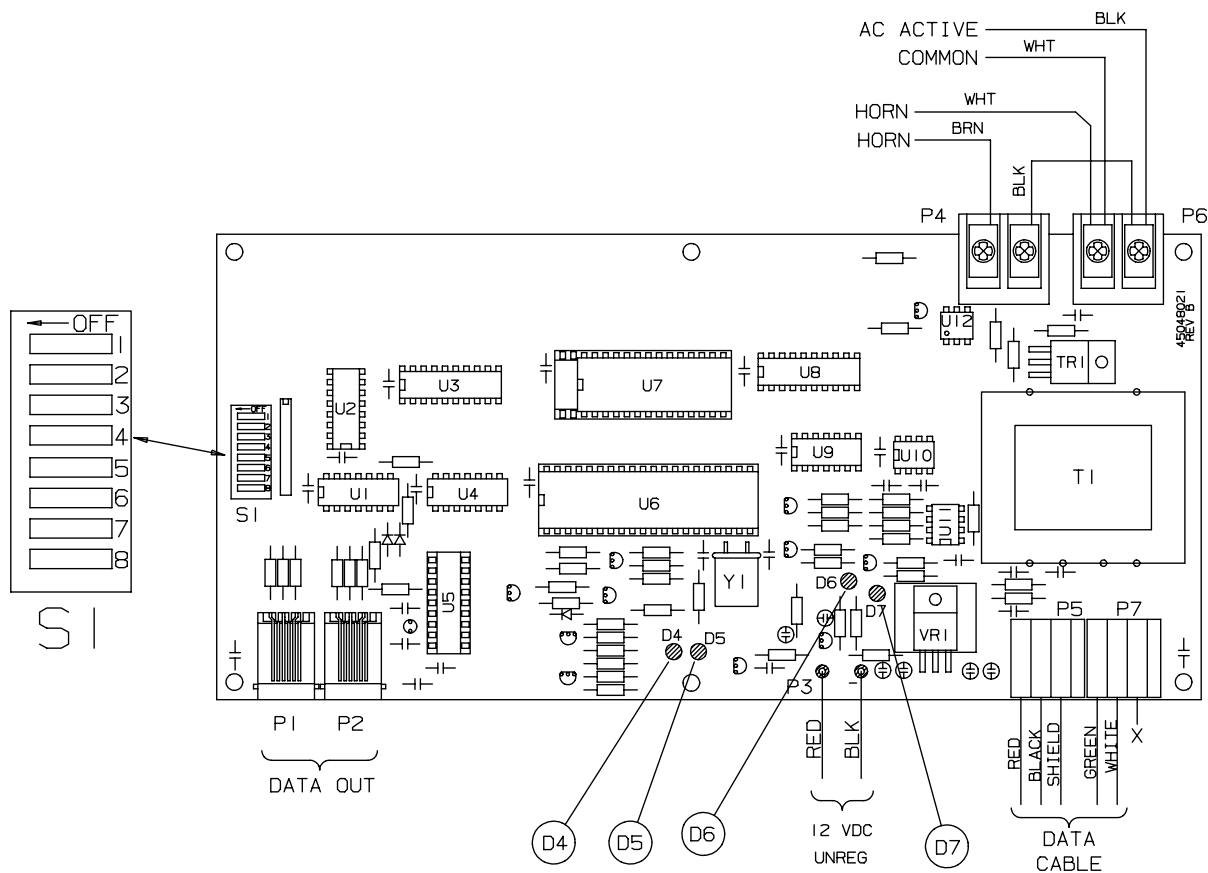
## WIRING ORDER

### 6.6 Power Supply Diagram



## POWER SUPPLY

### 6.7 Receiver Board Diagram



#### DIP SWITCH SETTINGS:

- 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

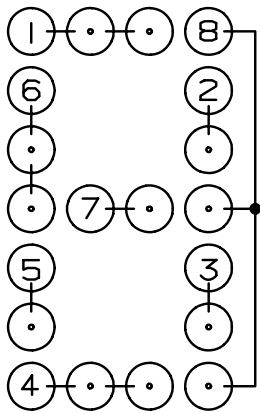
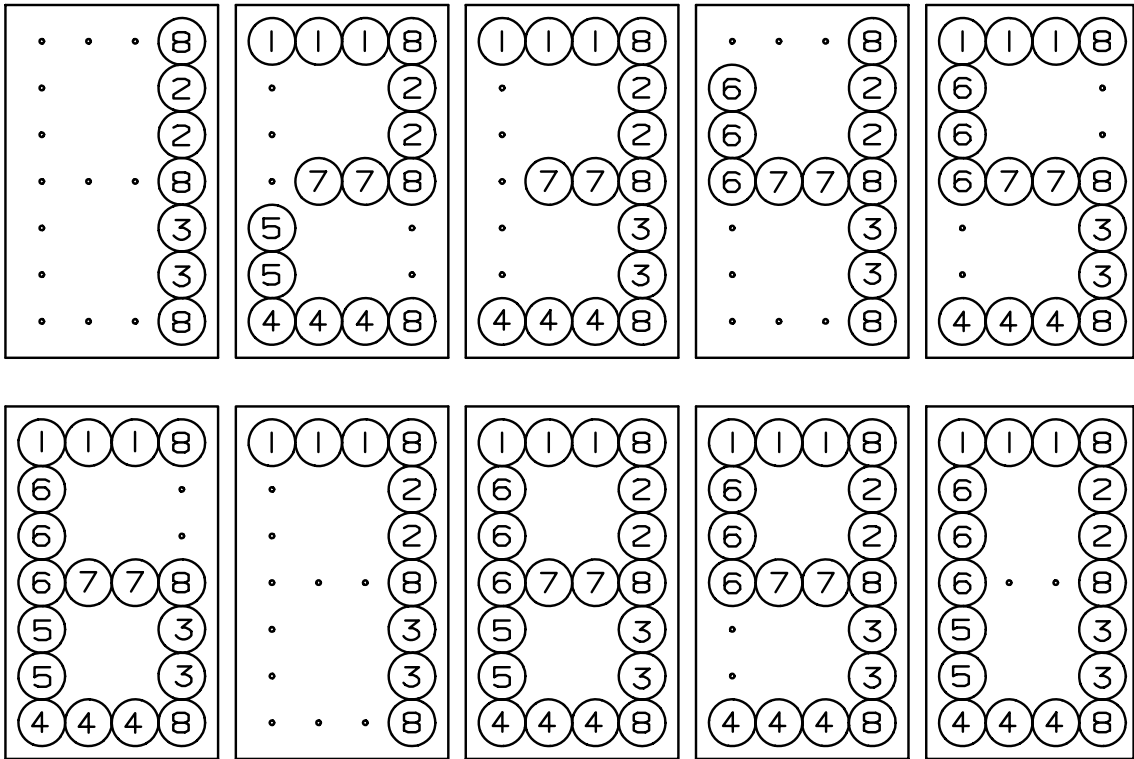
#### LED FUNCTIONS:

- 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

6.8 Microprocessor 4 X 7 LED Pattern (8 Bit)

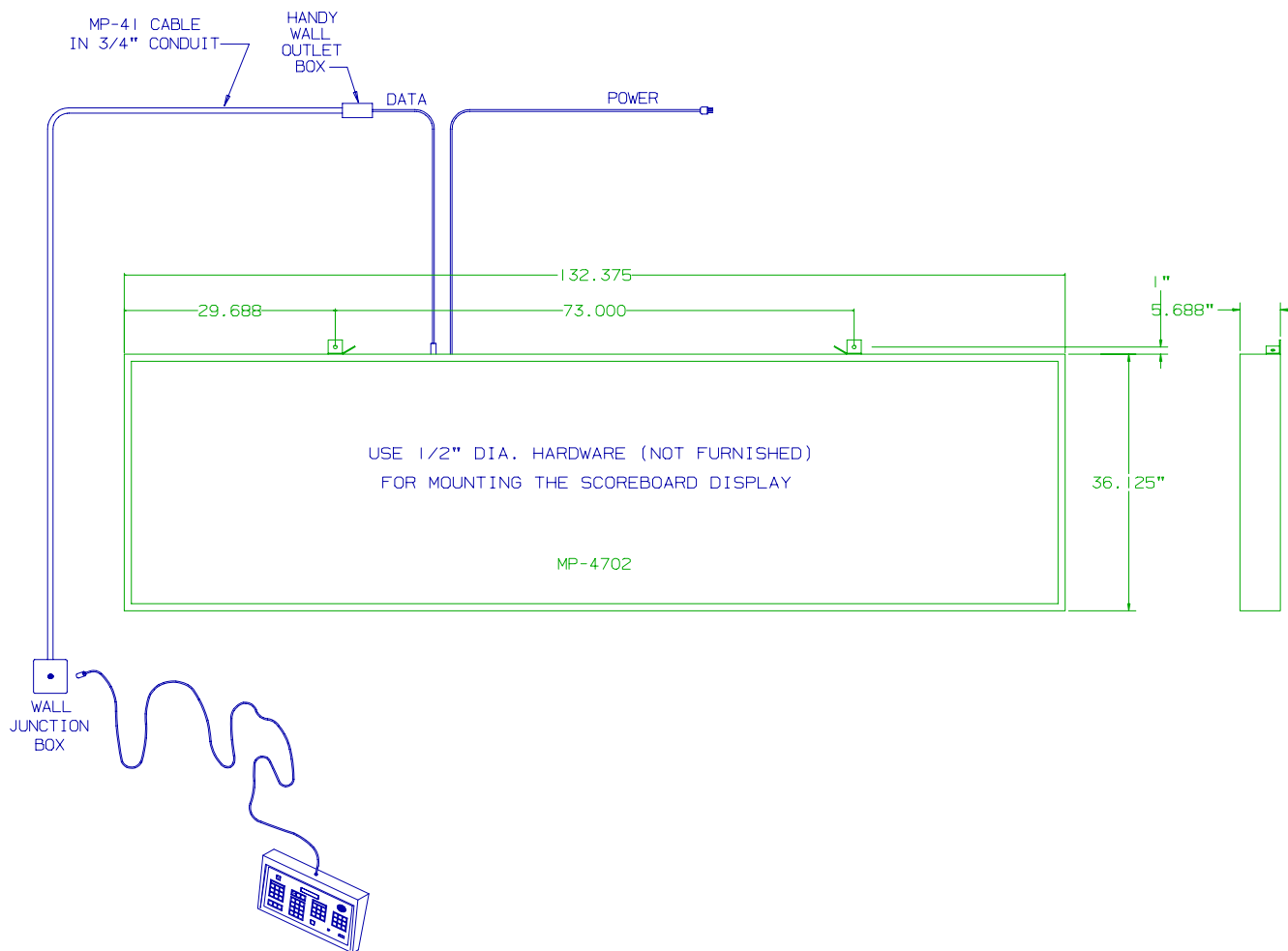


		NUMERALS									
BIT NUMBER		0	1	2	3	4	5	6	7	8	9
	1	0	.	2	3	.	5	6	7	8	9
	2	0	1	2	3	4	.	.	7	8	9
	3	0	1	.	3	4	5	6	7	8	9
	4	0	.	2	3	.	5	6	.	8	9
	5	0	.	2	.	.	.	6	.	8	.
	6	0	.	.	.	4	5	6	.	8	9
	7	.	.	2	3	4	5	6	.	8	9
	8	0	1	2	3	4	5	6	7	8	9

8

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.9 Installation Drawing



INSTALLATION DRAWING