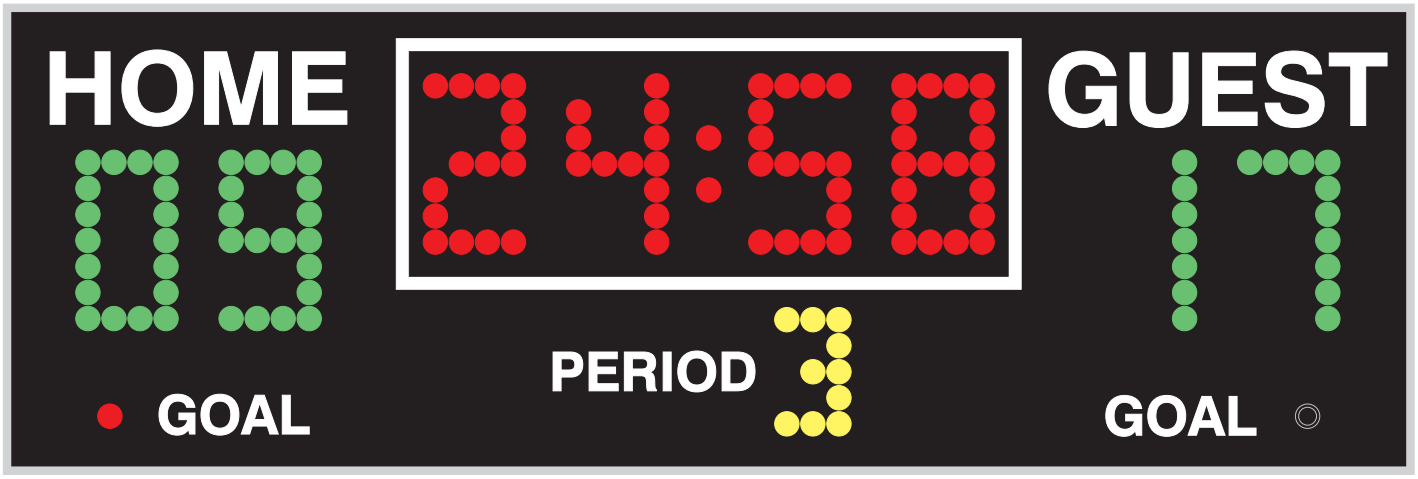
Operating Instructions & Service Manual



Hockey Scoreboard
Model MP-5509

EFFECTIVE S.N. 17,200, August 17, 2001

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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 100
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
E-mail score@everbrite.com

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 Hockey 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

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. If you want to be able to turn the scoreboard off when not in use, by means other than turning off the circuit breaker, a disconnect switch (NOT SUPPLIED) must be installed by the installer or an electrician.

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 not yet **UL** approved, but 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 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, Goal, Auto Horn Enable, and 1/10 Second Enable.

3.3 Console Power

Plug the hand held remote control into the scoreboard control console if you have a hand held time control.

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
MP5000 VER 2.0  2001
```

3.4 To Use Scoreboard

Enter the two digit code (46) shown in the upper right corner of the keyboard as in the following example:

Push **CODE** **4** **6** **ENTER** .

When the proper code has been entered, the console LCD will show as follows:

```
   0        :00      0
            H
```

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

3.5 Setup

The **SETUP** key will step through a list of operational settings.

Press **YES/NO** or make numeric entries to make changes.

Pushing **ENTER** without any other input skips to the next item.

Pushing **CLEAR** exits setup and all changes are kept.

Accurate time will be kept without power to the scoreboard for up to 2 months.

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** , with the timer stopped, to return the timer to the previously set value.

EDIT TIME allows changing the displayed time to any value.

3.7 Team Scores

The Home and Guest Scores can be changed in the following ways.

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** .

To clear the score: Push **SCORE** **CLEAR** .

3.8 Horn

The horn will blow 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 with this function in SETUP.

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

3.9 Goal Indicators

Push Home or Guest **GOAL** to illuminate the appropriate bonus indicator. A '<G' or 'G>' will be displayed when the Goal is illuminated. The indicator will be lit for about 10 seconds.

3.10 Dimming

The dimming level is set in setup, and saved for future events unless changed again in setup.

3.11 Period Indicators

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

3.12 Timeout Period

An automatic timeout period is selected in the setup mode, and 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: **TIME OUT** **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 power supply 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) Check to see that the Green LED on the power supply is lit.
(e) Check for 12 VDC at the power supply terminal.
(f) 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 red and the black wire in the junction box, using a voltmeter set on the 12 VDC or higher scale.

If the voltage is 10 VDC or greater contact the customer service department.

If the voltage is 0 VDC, 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 (red and black wires).

If the voltage is less than 10 VDC consult the wiring instructions for long cable compensation (modify for AC adaptor).

(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 D1 on the receiver board is flashing rapidly call the customer service department.

If LED D1 on the receiver board is not flashing, plug the control console directly into the top of the scoreboard.

If LED D1 on the receiver board flashes now check the junction box and data cable for continuity (green and white wires).

If LED D1 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 12-13 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 LED D4 on the receiver board. It should be medium brightness.
Change the Dim level on the control console. D4 brightness should change.
(f) Check if LED D5 on the receiver board is on.

If D5 is on, check if D2 and D6 are flashing and call customer service department. The flash will be very fast. The LED's may appear to be on at half brightness.

If D5 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 clusters 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 clusters remain lit all the time, the problem is in the figuregram. If the clusters 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 clusters do not come on:

(a) Check for burned out clusters.
(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.

CLUSTER REMOVAL

If it becomes necessary to remove a LED cluster: Insert a pointed object, like the end of a ball point pen, into the two holes in the cluster retaining ring, and rotate the cluster until these holes are at 3:00 o'clock and 9:00 o'clock. At this position the cluster should be removable from the front of the face of the scoreboard. Reverse the procedure to install the cluster.

5. REPLACEMENT PARTS

5.1 Scoreboard Display Parts

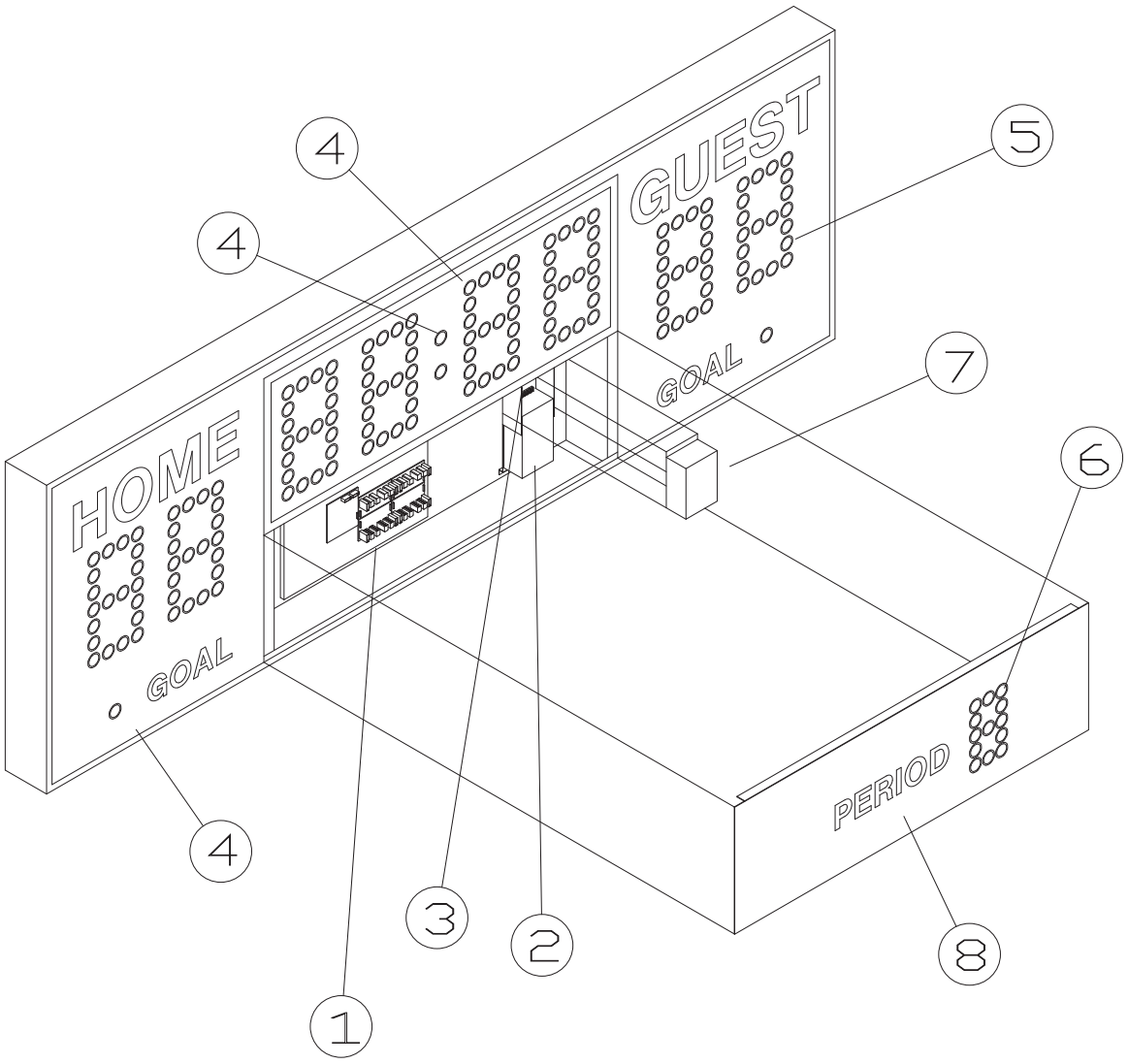


figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-5509 Hockey)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	151271	Display Assembly		151271
1-1	150814	Controller Assembly SEE FIGURE 2	A2	150814
1-2	151731	Power Supply Plate Assy SEE FIGURE 3	A6	151731
1-3	EL00525P	Relay, 12 VDC DPDT 10A contact	K1	MY2DC12(S)
1-4	150820	Cluster, Red		150820
1-5	150822	Cluster, Green		150822
1-6	150821	Cluster, Amber		150821
1-7	151727	Power Supply Cover		151727
1-8	703609	Horn, 350N		703609
	151735	Control Console, MP-5000		151735
	151684	Slipsheet Pair		151684
	151692	Transmitter PCB Assembly *** PROGRAM MP5000 V2.00***	A1	151692
	SW005100	Toggle Switch,	S1	SW005100
	151740	Cable Assy, 25' control		151740
	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,		
	151739	Wall Junction Box, Single		151739
	930895	Connector, 6 Pin Female	J1	RM12BRD6S
	150500	Cable, MP-41 Control		8723
	151741	Wall Junction Box, Dual		151741
	930895	Connector, 6 Pin Female	J1-J3	RM12BRD6S
	150500	Cable, MP-41 Control		8723

5.2 Controller Assembly Parts

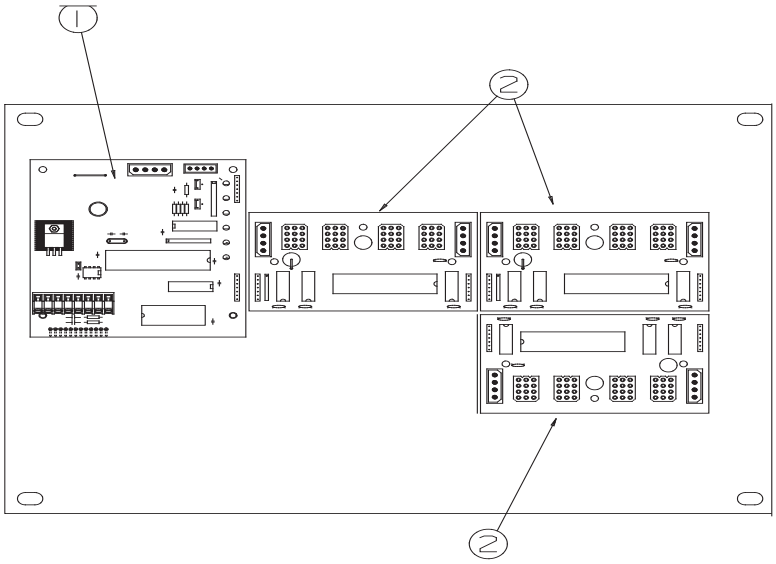


figure 2

CONTROLLER ASSEMBLY

REPLACEMENT PARTS LIST (MP-5509) Controller Assembly

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	150814	Controller Assembly	A2	150814
2-1	150635	PC Board Assy, 5000 Series Receiver *** PROGRAM RX5000 V2.00 ***	A3	150635
2-2	150634	PC Board Assy, 4 Pos. Driver	A4-A6	150634
2-3	151718	Cable Set, DC Power 4”		150718
2-4	705723	Spacer, Amerlock		SPC# PCS-6
2-5	930674	Cable Assy, 3” Ribbon 7C Fem.		CE 100F22-7 Pand

5.3 Power Supply Assembly Parts

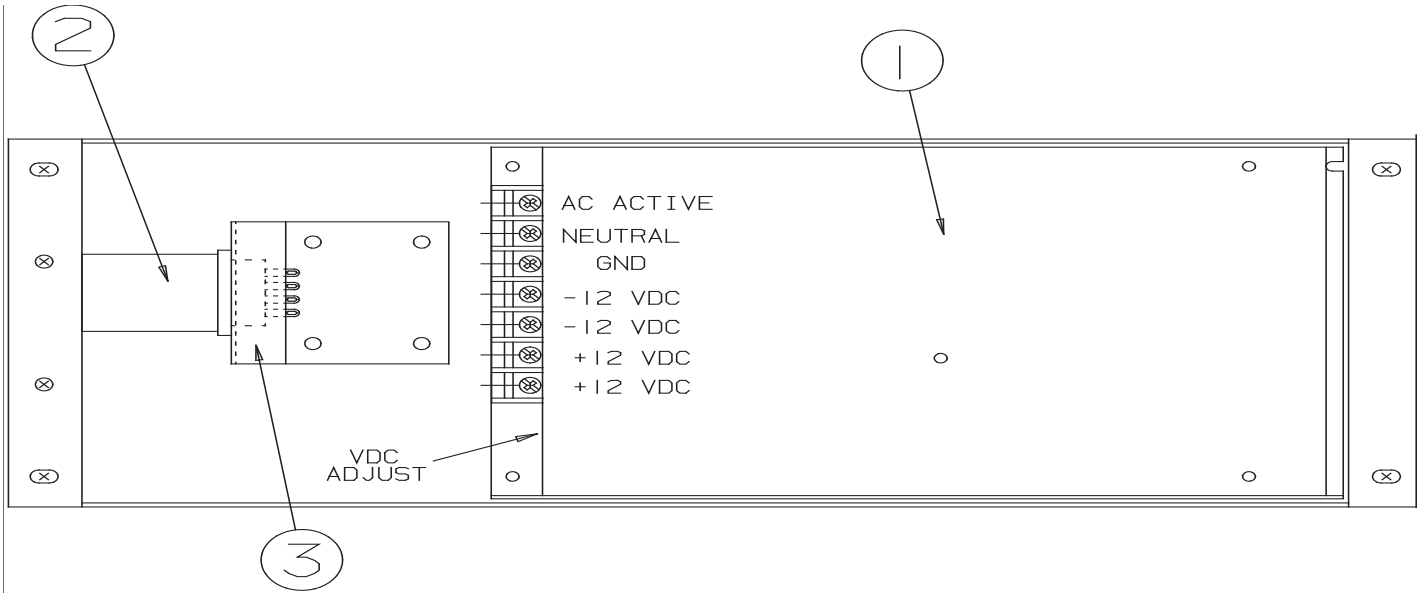


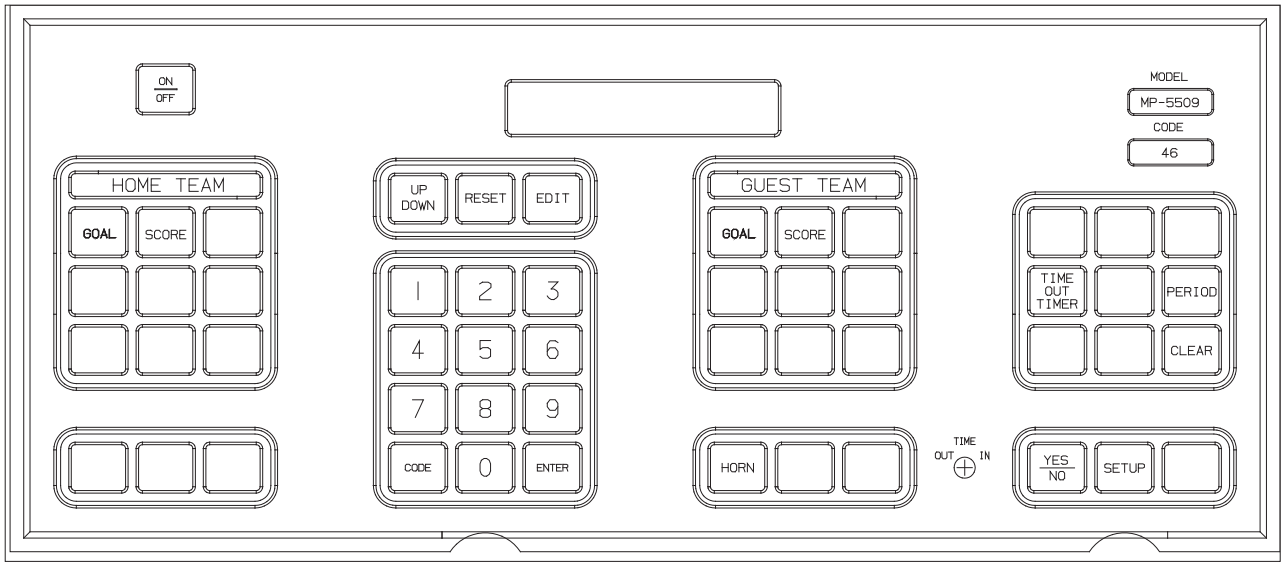
figure 3

POWER SUPPLY PLATE ASSEMBLY

REPLACEMENT PARTS LIST (MP-5509) Power Supply Plate Assembly				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
3-	151731	Power Supply Plate Assembly	A6	151731
3-1	BL00054P	Power Supply, 12V 150 Watt		S-150-13-5
3-2	EL00525P	Relay, 12 VDC 10A contact	K1	MY2DC12(S)
3-3	703118	Socket, Relay	A7	27E008
3-4	151716	Cable Assy, 3' Power		151716

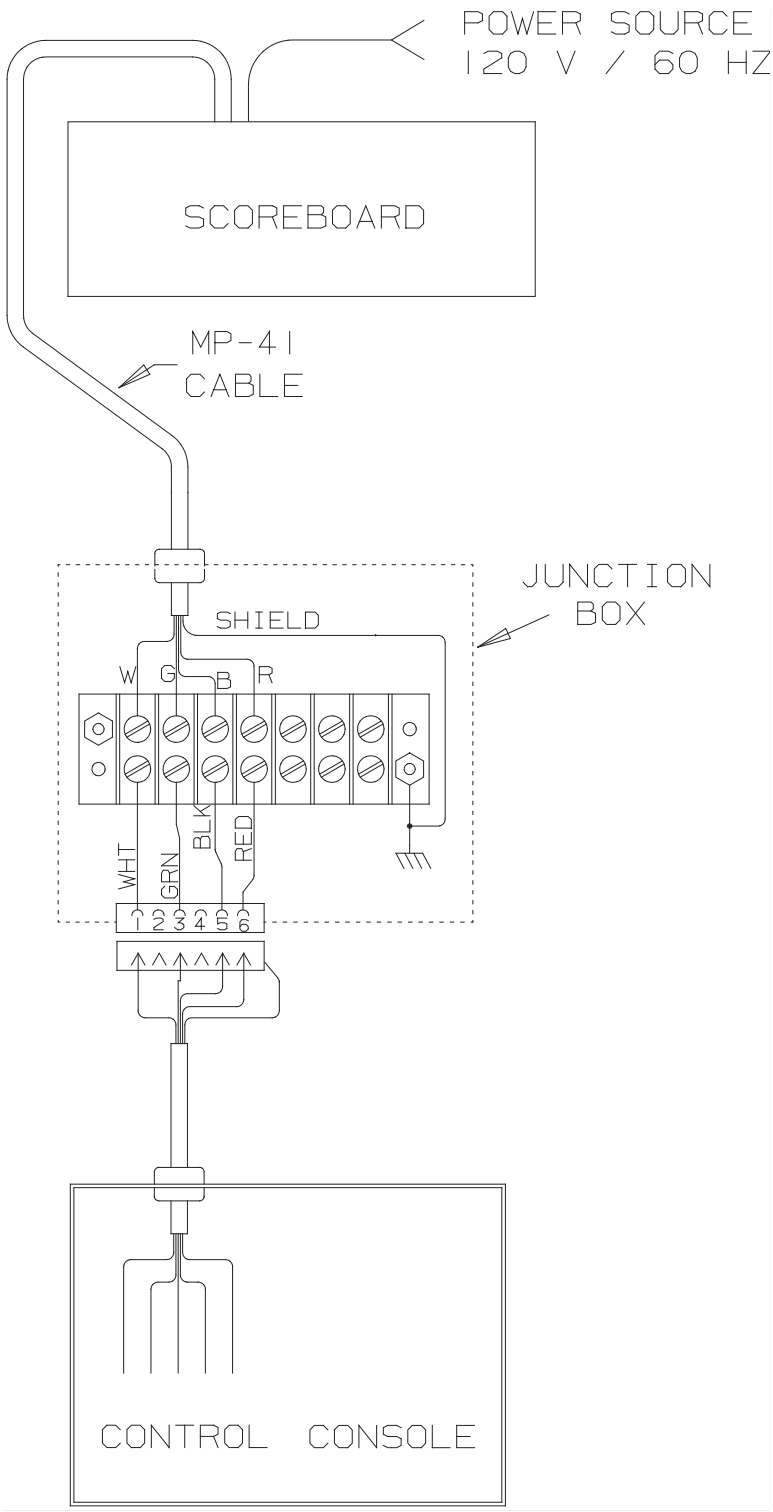
6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout



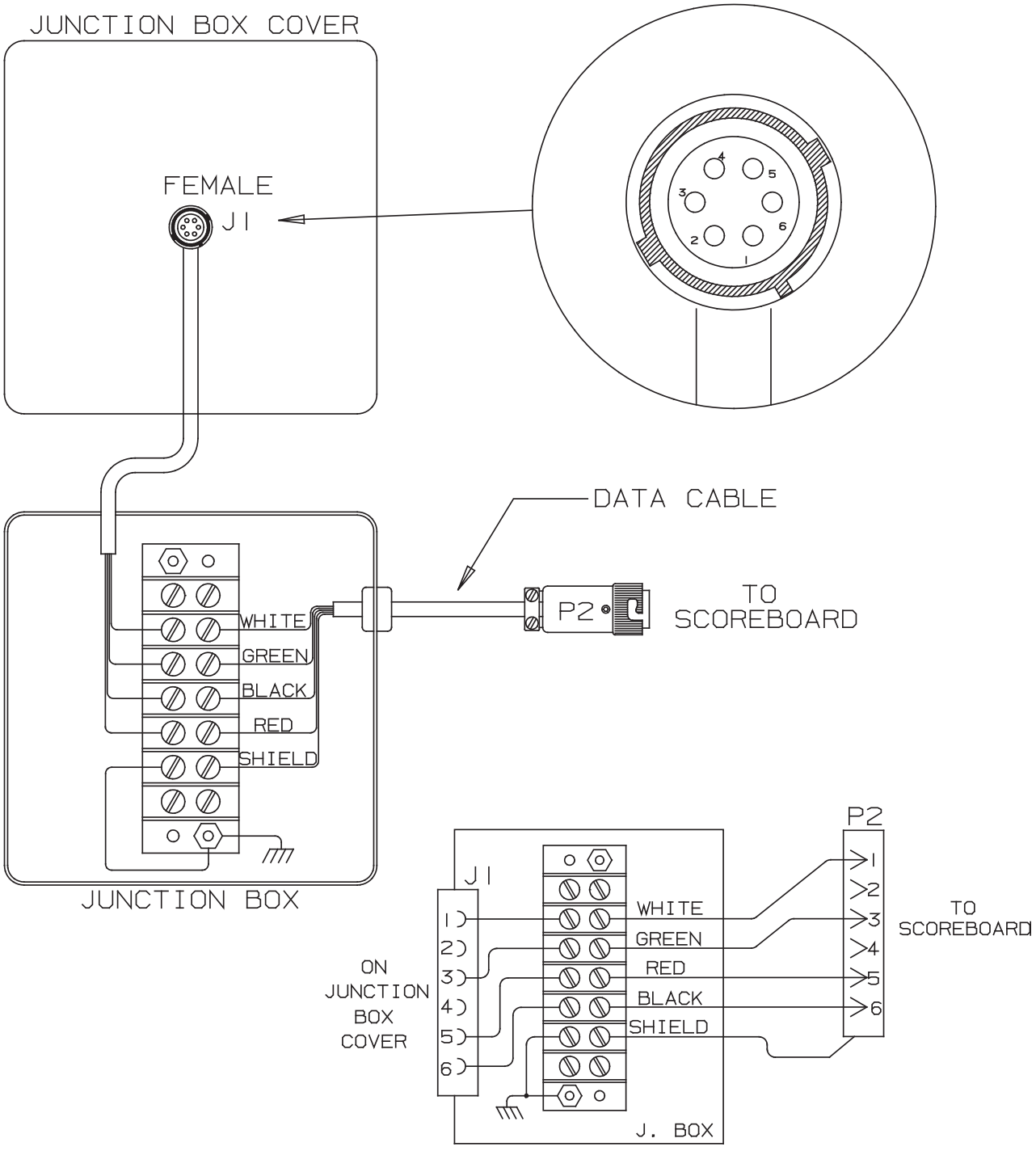
CONSOLE KEYBOARD

6.2 Scoreboard System Layout



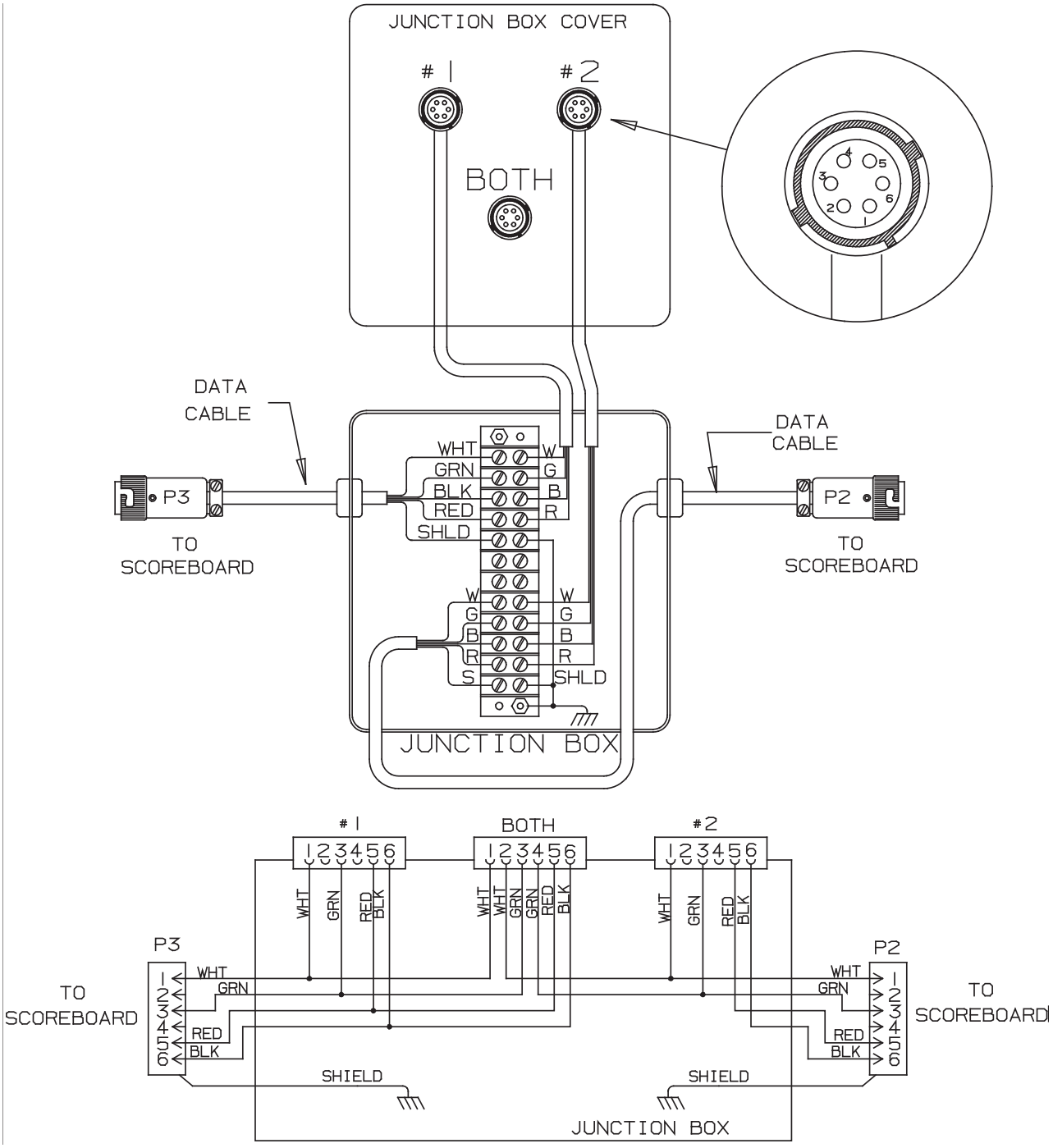
SYSTEM LAYOUT

6.3 Single Wall Junction Box Wiring



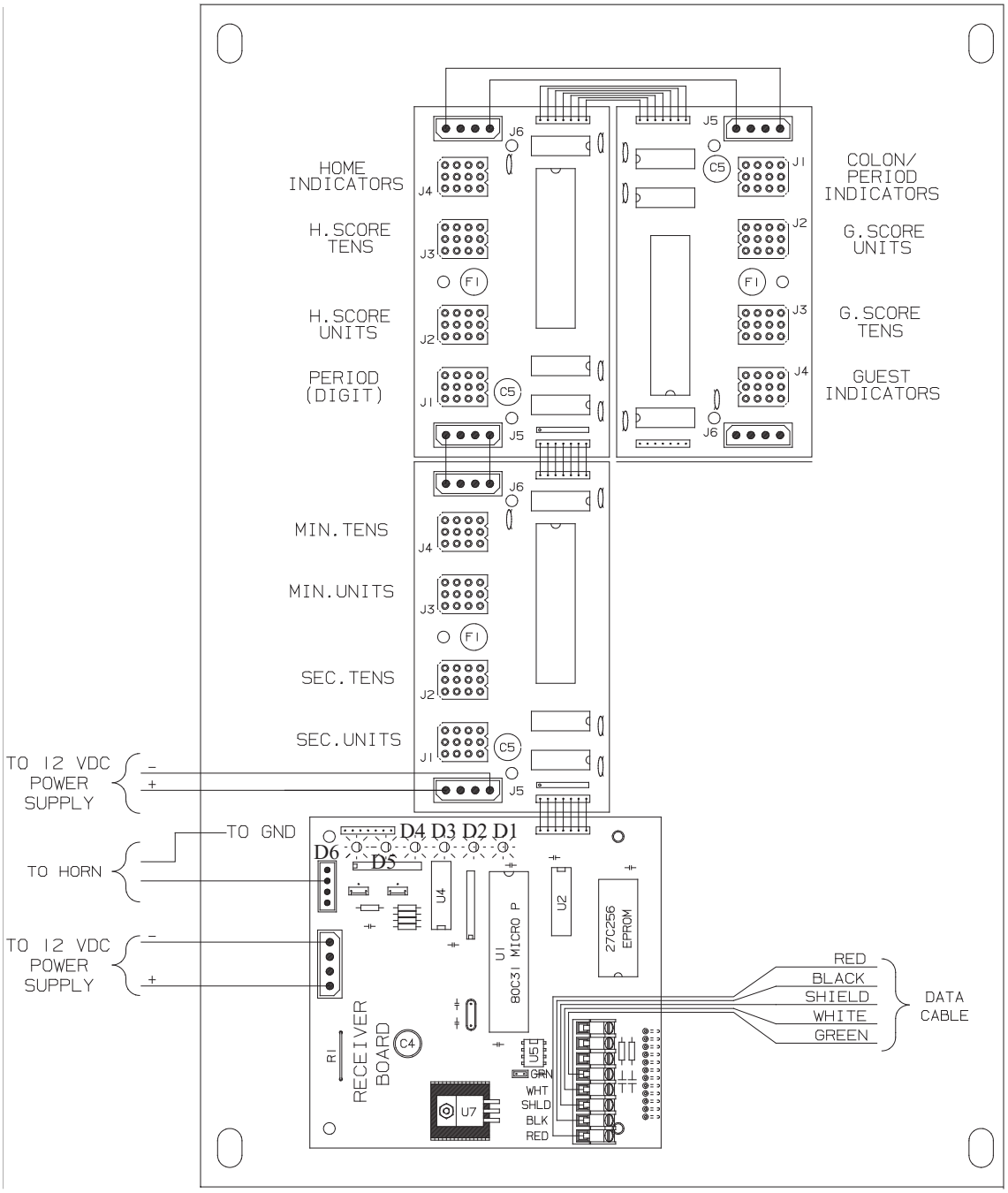
SINGLE JUNCTION BOX WIRING

6.4 Dual Wall Junction Box Wiring



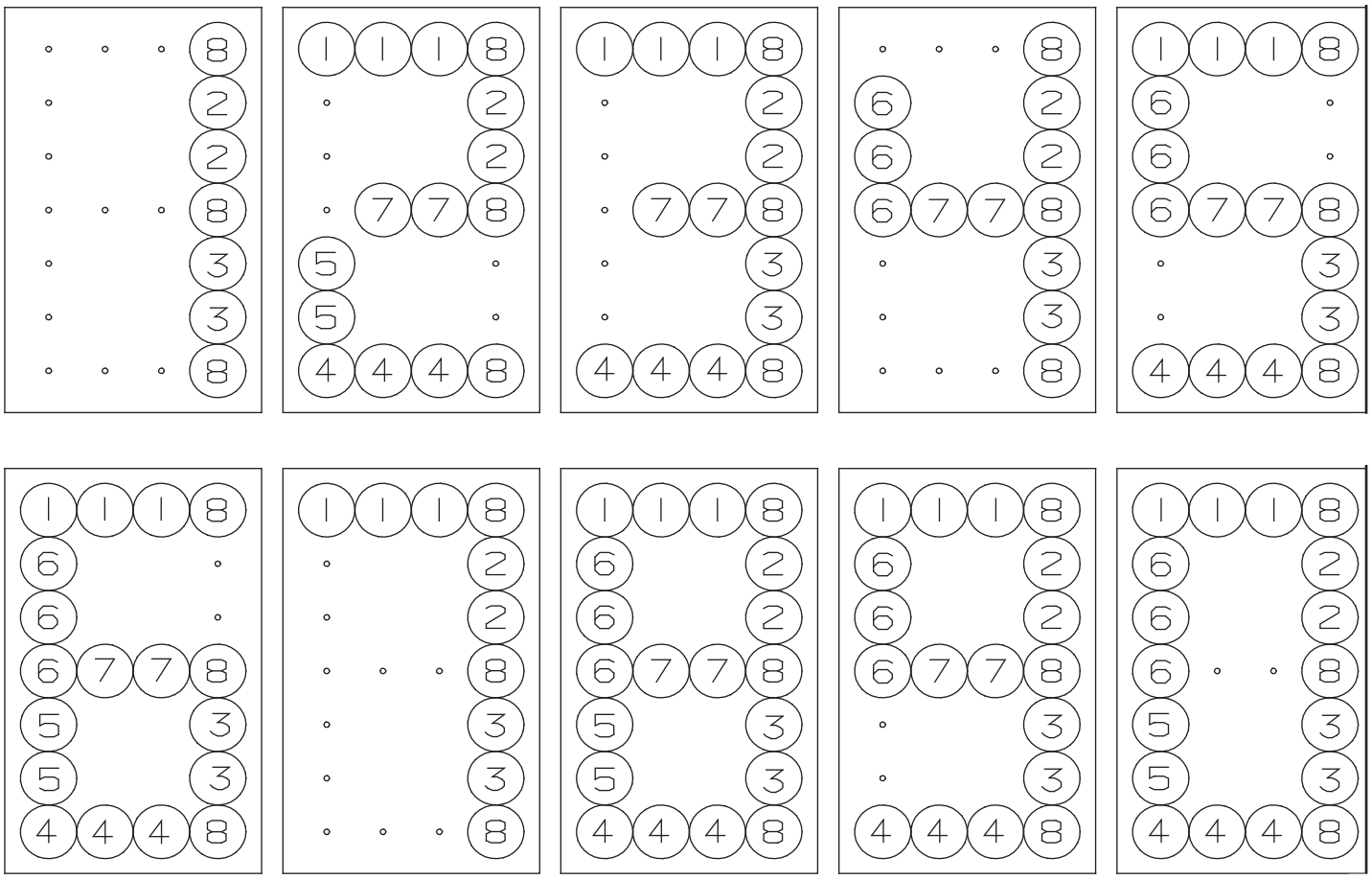
DUAL JUNCTION BOX WIRING

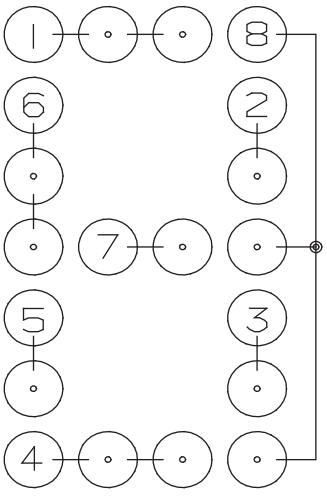
6.5 Controller Wiring Diagram



CONTROLLER ASSEMBLY

6.6 Microprocesor 4 X 7 LED Pattern (8 Bit)



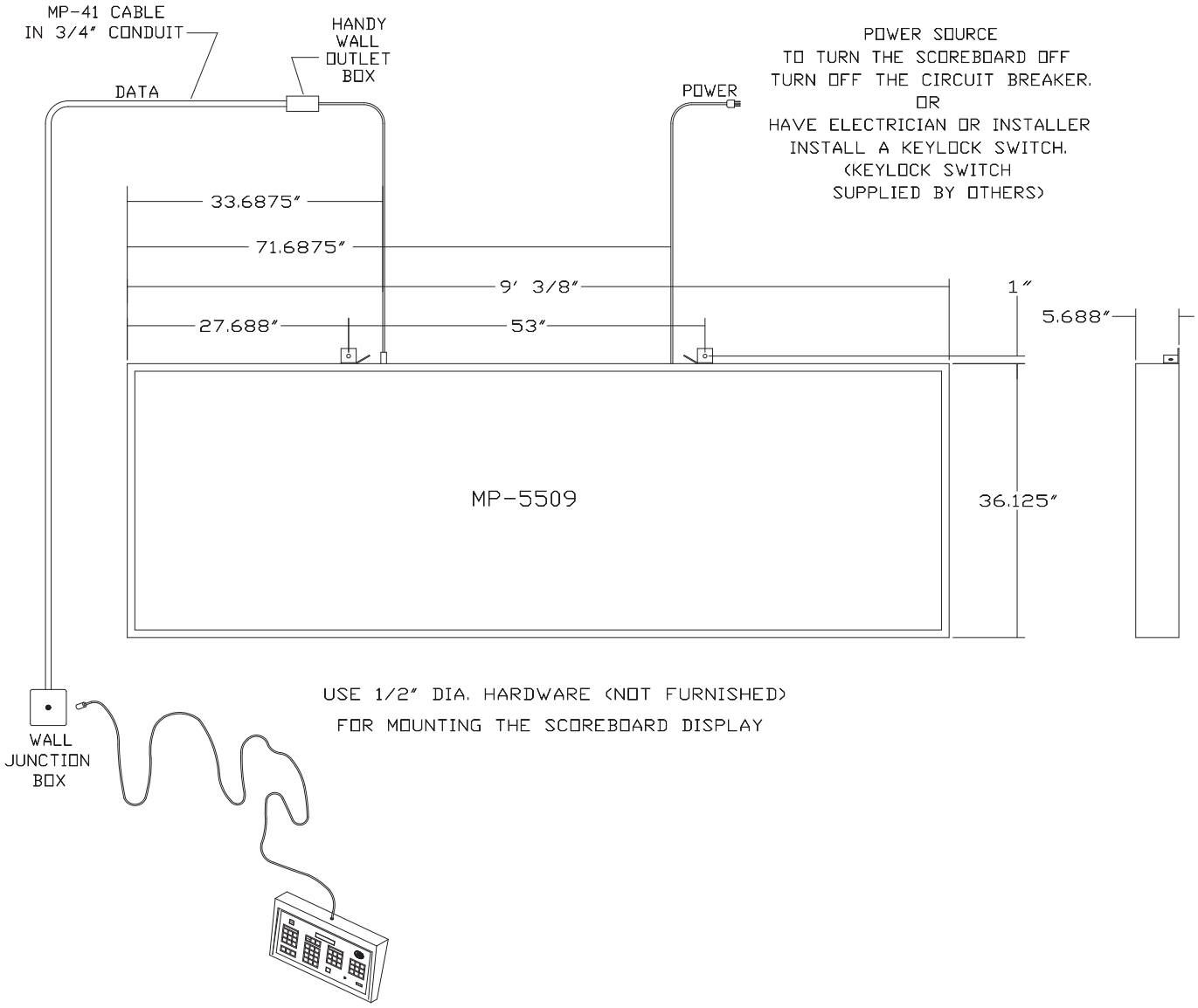


NUMERALS

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

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.7 Installation Drawing



INSTALLATION DRAWING