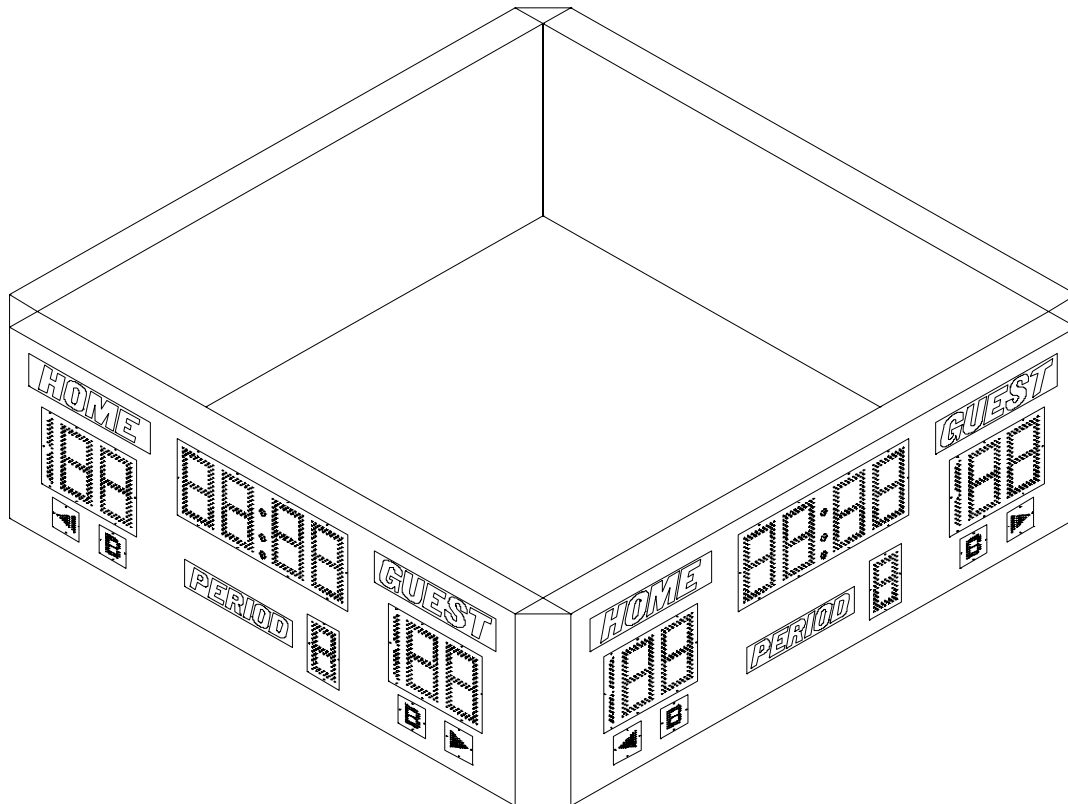# ELECTRO-MECH SCOREBOARD CO.

MODEL 2350-4 BASKETBALL SCOREBOARD

OWNER'S HANDBOOK

Thank you for choosing an Electro-Mech Scoreboard for your athletic complex. We are confident that your new scoreboard will give many years of reliable service.

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2350-4 BASKETBALL SCOREBOARD SPECIFICATIONS

GENERAL: This ETL listed four sided scoreboard includes four scoreboard cabinets, four corner pieces, assembly hardware, control console, control cable (sold separately), 10 ft. extension cable, three 25 ft. extension cables, and junction box.

DIMENSIONS: Approximately 12' square at the top x 36" H x 6" D   (2350-4 with side sponsor panel measures approximately 15' square at the top L x 36" H x 6" D)

WEIGHT: 580 lbs   (2350-4 with side sponsor panel weighs 640 lbs)

SCOREBOARD CONSTRUCTION: The outer frame is made from extruded aluminum. Internal structural parts may be extruded aluminum or formed from aluminum sheet. The face and back are made from aluminum sheet. The face is finished with enamel paint. Black is the standard face color. White is the standard color for the sponsor panel and captions.

DISPLAY: The 2350-4 basketball scoreboard displays HOME and GUEST scores to 199, a 99:00 clock with $1/10^{th}$ of a second timing, PERIODS to 4, HOME and GUEST bonus and possession symbols on each side. Each side has an internal horn.

DIGITS AND SYMBOLS: Light emitting diodes mounted on printed circuit boards form the digits and symbols. The clock is formed with 12" red digits, the HOME and GUEST scores are formed with 12" yellow digits, the PERIOD is formed with a 9" green digit, bonus symbols are green, the possession symbols and colon / decimal symbols are red.

POWER REQUIREMENTS: Scoreboard - 120 VAC, 4 A, 60 Hz (each side uses 120 VAC, 1A, 60 Hz). Each side has an attached 6 ft power cord. **Control Console** - 120 VAC, 0.5 A, 60 Hz

SCOREBOARD ELECTRONICS: 100% solid state fully enclosed.

CONTROL CONSOLE: The microprocessor control console is constructed of a rugged plastic housing with a metal back plate. It features a 37 key sealed membrane keypad, a LCD display of game information, an attached 6 foot power cord, and a lithium cell battery backup to retain game information.

CONTROL CABLE: The cable has two 22 AWG stranded copper conductors with semi-rigid PVC insulation. It also has a braided shield and a foil shield. The polyethylene jacket is rated at 300 volts. The cable measures approximately ¼" in diameter. One length is required to run from the scoreboard to the point of operation.

JUNCTION BOX AND EXTENSION CABLE: A 4 ¼" x 2 ¼" x 2" junction box with a stereo jack mounted on the face is attached to the control cable at the point of operation. A ten foot extension cable connects the control console to the junction box.

WARRANTY: Five year limited warranty.

SCOREBOARD INSTALLATION

This scoreboard is designed for indoor use only. The scoreboard arrives in eight sections: four scoreboard cabinets and four corner pieces. Two eyebolts are attached to the top of each cabinet. The assembled unit is designed to be suspended from cables attached to these eight eyebolts. The mounting bolts and washers necessary to attach the corners are provided with the scoreboard. Installation of the scoreboard consists of joining the four scoreboard cabinets at the corners using the provided hardware, hanging the assembled scoreboard in the air at the desired height and making the proper electrical connections.

SCOREBOARD ASSEMBLY

1. Each corner piece and scoreboard cabinet has numbers written on the rear panel. It is necessary to attach each corner piece to a cabinet side that has an identical number.
2. Each corner bracket has a black face panel attached by some hex head screws. Remove the face panel from a corner bracket.
3. Align the corner bracket with one of the scoreboard cabinet sides. The widest part of the corner bracket should be aligned with the top of the scoreboard cabinet. Note: This scoreboard is designed to be angled downward. It will to tilt the scoreboard cabinets to align them with the corner brackets.
4. Insert a small washer over a bolt.
5. Insert a larger washer over the bolt.
6. Pass the bolt through one of the holes inside the corner bracket and thread it into the threaded hole provided in the side of the scoreboard cabinet.
7. Install the other three bolts to the scoreboard cabinet in the same manner.
8. Attach another scoreboard cabinet to the other side of the corner bracket in the same manner.
9. Reinstall the corner bracket face panel.
10. Repeat this process until all the scoreboard cabinets are joined together at the corners with the brackets.
11. Connect your chains or cables to the eyebolts of the assembled scoreboard.
12. Raise the scoreboard into the air and secure the chains or cables.

ELECTRICAL CONNECTIONS

This scoreboard was designed to make the electrical connections as easy as possible. These connections include connecting each scoreboard cabinet to a power source, installing the control cable, daisychaining the serial data lines, and connecting the control console. Figure 1 shows the electrical connection points on the scoreboard. We recommend a qualified electrician perform the needed electrical connections to ensure proper operation of your scoreboard.
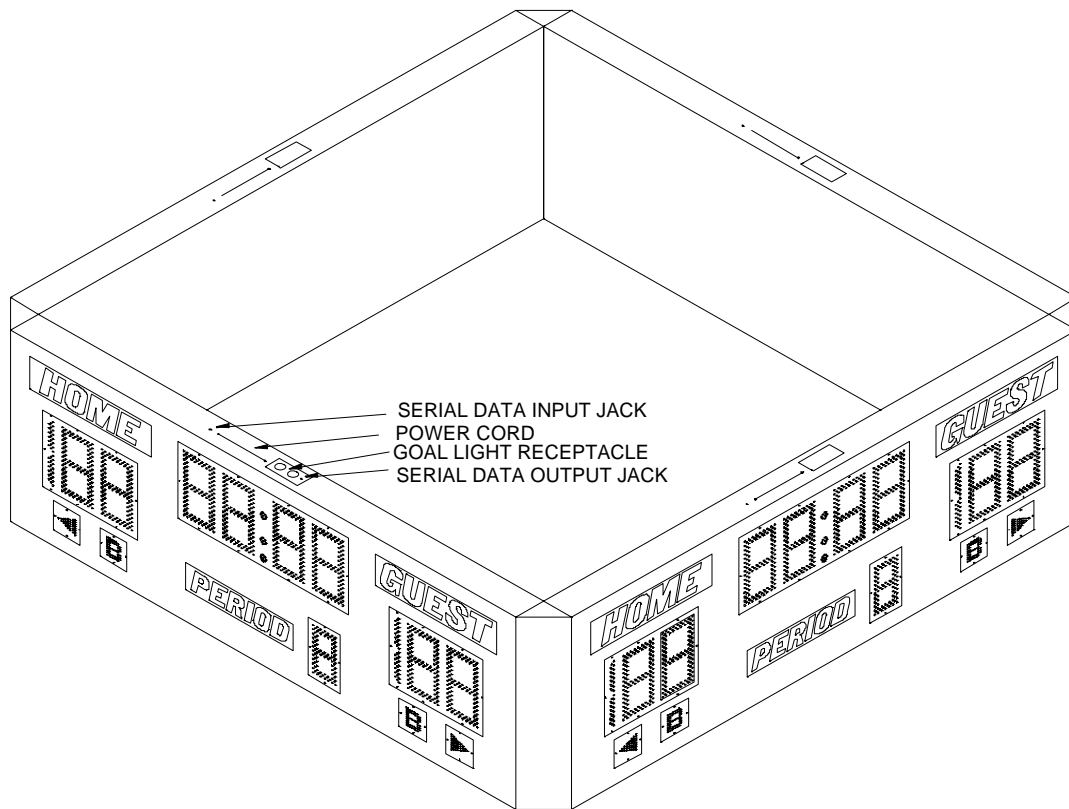

Figure 1 Electrical Connection Points

Connecting The Scoreboard To Your Power Source

Each scoreboard cabinet requires 120 VAC 1 amp service. Each scoreboard cabinet has a 6 foot attached power cord which can be plugged into a NEMA 5-15R receptacle.

ScoreLink 200

The SCORELINK 200 RF MODEM SET is intended to eliminate the control cable between the scoreboard and the control console on Electro-Mech Scoreboard MM and MP series scoreboards. If you have purchased this option, disregard the next section of this manual. Refer to the SCORELINK 200 RF MODEM SET OWNER'S HANDBOOK for installation instructions.

Installing The Control Cable

The control cable connects the scoreboard to the control console. A small junction box with a stereo jack mounted on the face plate is attached to the control cable at the point of operation of the scoreboard. A stereo plug is attached to the scoreboard end of the control cable. The junction box should be securely mounted within ten feet of the rear of the control console. Most customers order the control cable with the junction box and stereo plug attached to the control cable. Some customers prefer to attach them after the cable is installed. Those customers must match their stereo jack to one of the stereo jacks in figure 2 in order to make the proper connections. These connections should be soldered.

STEREN
1/4" STEREO JACK

ORANGE

1   3   2

PIN 1 - BLACK WIRE
PIN 2 - RED WIRE
PIN 3 - SHIELD, GREEN WIRE

SWITCHCRAFT
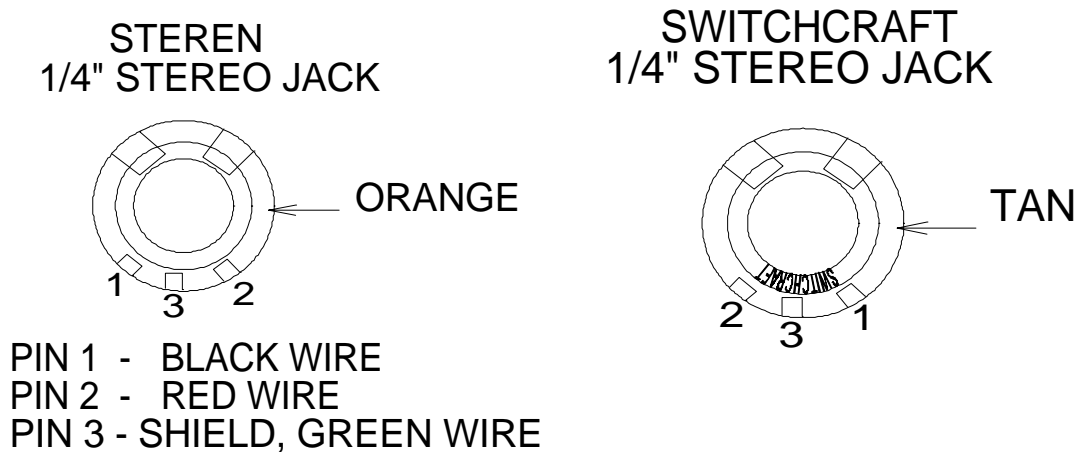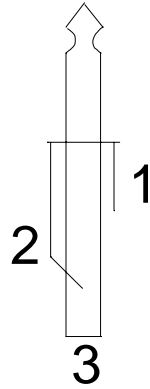1/4" STEREO JACK

TAN

2   3   1

Figure 2 Stereo Jack Wiring Diagram

Attach a stereo plug to the scoreboard end of the cable according to the figure 3.

PIN 1 - BLACK WIRE
PIN 2 - RED WIRE
PIN 3 - SHIELD WIRE

Figure 3 Stereo Plug Wiring Diagram

Insert the stereo plug into the serial data input jack mounted on top of one of the scoreboard cabinets.

Daisychaining the Serial Data Lines

Plug one end of a 25 foot extension cable (a cable with stereo plugs attached to each end) into the serial data output jack of the same cabinet. Plug the other end into the serial data input jack of the next scoreboard cabinet to the right of the first cabinet. Connect the next two cabinets in the same manner using two of the remaining extension cables.

Connecting The Control Console

The control console is connected to the junction box via the extension cable. This extra length of cable allows the scoreboard operator some mobility and the ability to store the control console after the game. The control console requires a 120 VAC 1/2 A power source. The power cord can be plugged into a NEMA 5-15R receptacle.

1. Connect one end of the extension cable to the jack on the junction box.

2. Connect the other end of the extension cable to the jack on the rear of the control console.

3. Plug the control console power cord into a 120 VAC outlet.

Installation of Two or More Scoreboards at the Same Site

It is possible to operate up to four scoreboards from the same console. Install a control cable line in the same manner as described previously for each additional scoreboard. Connect the additional control cable lines with extension cables to the control console. **Never splice the control cables together or connect them to the same junction box.**

Goal Lights Installation

A set of goal lights is an accessory that can be used with this scoreboard. Mount the goal lights in the desired location. Splice wires (not provided) to the two wire leads of the goal light. Attach a polarized plug to the other end of the wires. Insert the plug into the goal light receptacle on the right side of the scoreboard cabinet. The goal light receptacle is protected by a 1 amp fuse. Do not insert bulbs greater than 40 watts in the goal lights.

SCOREBOARD OPERATION

The 2350-4 Scoreboard is operated by the control console**. No scoreboard functions will operate without connecting the control console.** Figure 4 shows the keypad layout on your control console. The various keypad functions are described in the text below the figure.

ELECTRO-MECH SCOREBOARD CO.			
SET CLOCK	SET CLOCK .1 SEC	.1 SEC ON/ OFF	CLOCK UP/ DOWN
SET SHOT TIMER	AUTO HORN	TIME OF DAY	TIME OUT TIMER

BASKETBALL/WRESTLING/VOLLYBALL

SET GUEST SCORE	SET HOME SCORE	PLAYER MATCH GAME	PLAYER FOUL

(TEAM MATCH GAMES	FOULS) POINTS) WON)	GUEST BONUS	HOME BONUS
GUEST	HOME		

GUEST SCORE +1		HOME SCORE +1

7	8	9
4	5	6
1	2	3
CLEAR	0	ENTER

NEW GAME
QTR

NEXT POSS	HORN ON/ OFF	CLOCK ON/ OFF

Figure 4 Keypad Layout

Control Console Key Functions

1. **SET CLOCK** – This key sets the time displayed on the scoreboard clock. Press [SET CLOCK], the keypad numbers for the time, [ENTER]. Example: Press [SET CLOCK], [6], [0], [0], [0], [ENTER] on the control console. 60:00 will be displayed on the clock section of the scoreboard.

2. **SET CLOCK .1 SEC** – This key is used when the clock is in the $1/10^{th}$ second mode. Press [SET CLOCK .1 SEC], the keypad numbers for the time, [ENTER]. Example: Press [SET CLOCK .1 SEC], [5], [3], [8], [ENTER] on the control console. 53.8 will be displayed on the clock section of the scoreboard.

3. **.1 SEC ON OFF** – This key is used to enable or disable the $1/10^{th}$ second mode on the scoreboard. This mode is enabled when the control console is turned on. If it is disabled, the LCD display on the control console will still show $1/10^{th}$ second timing, but the scoreboard will not display it. To turn this function off, press [.1 SEC ON/OFF]. The console LCD display will read:

> CLOCK ON - 1
> .1 SEC OFF - 0

Press [0], [ENTER] on the control console.

4. **CLOCK UP / DOWN** – The clock can be set up to either count up or count down. The control console will reset to the clock down mode when it is turned on. To make the clock count up, press [CLOCK UP / DOWN]. The console LCD display will read:

> GAME   UP   - 1
> CLOCK DOWN - 0

Press [0], [ENTER] on the control console. To reset the clock to count down mode, press [CLOCK UP / DOWN], [1], [ENTER] on the control console.

5. **SET SHOT TIMER** – The shot timer default time is 30 seconds. To change this time, press [SET SHOT TIME]. The console LCD display will read:

> ST RESET   <30>

Press the keypad numbers for the time, [ENTER]. The LCD display will then read:

> ST-OB RESET <05>

This will allow you to change the out of bounds time. To change this time, press the keypad numbers for the time, [ENTER].

6. **AUTO HORN** – This key allows the operator to control the end of period horn and / or the time out horn. The horn normally sounds for two seconds when the clock reaches 0:00. The end of period horn can be disabled by pressing [AUTO HORN]. The console LCD display will read:

> GAME PRESS <1> ON
> HORN   PRESS <0> OFF

Press [0], [ENTER] to disable the horn. The console LCD display will then read:

> T-O   PRESS <1>   ON
> HORN PRESS <0>   OFF

The time out horn is normally disabled. To enable the horn to sound at the end of the time out, press [1], [ENTER] on the control console.

7. **TIME OF DAY** – The time of day can be displayed on the clock section of the scoreboard. **THE GAME CLOCK WILL BE INOPERABLE UNTIL THE TIME OF DAY FUNCTION IS TURNED OFF**. To turn the time of day clock on, press [TIME OF DAY]. The console LCD display will read:

```
TIME OF            ON  <1>
DAY  CLOCK     OFF <0>
```

Press [1], [ENTER] on the control console. The console LCD display will then read:

```
SET CLK   <__:__>
```

Press the keypad numbers for the time, [ENTER]. The scoreboard will display the time of day.

8. **TIME OUT TIMER** – To set the Time Out timer, press [TIME OUT TIMER]. The console LCD display will read:

```
SET T-O  <__:__>
```

Press the keypad numbers for the time, [ENTER]. The scoreboard will not display the Time Out time.

9. **SET GUEST SCORE** – To set the guest score, press [SET GUEST SCORE], the keypad numbers for the time, [ENTER]. EXAMPLE: To set the guest score to 53, press [SET GUEST SCORE], [5], [3], [ENTER].

10. **SET HOME SCORE** – To set the home score, press [SET HOME SCORE], the keypad numbers for the time, [ENTER]. EXAMPLE: To set the home score to 75, press [SET HOME SCORE], [7], [5], [ENTER].

11. **PLAYER MATCH GAME** – Even though this information can be displayed on the control console, it is not displayed on the model 2350-4 scoreboard.

12. **PLAYER FOUL** – Even though this information can be displayed on the control console, it is not displayed on the model 2350-4 scoreboard.

13. **GUEST TEAM FOULS, MATCH POINTS, GAMES WON** – Even though this information can be displayed on the control console, it is not displayed on the model 2350-4 scoreboard.

14. **HOME TEAM FOULS, MATCH POINTS, GAMES WON** – Even though this information can be displayed on the control console, it is not displayed on the model 2350-4 scoreboard.

15. **GUEST BONUS** – This key toggles the guest bonus symbol (B) on and off.

16. **HOME BONUS** – This key toggles the home bonus symbol (B) on and off.

17. **GUEST SCORE +1** – This key increments the guest score by one point.

18. **HOME SCORE +1** – This key increments the home score by one point.

19. **NEXT POSS** – This key toggles the possession arrow symbol between guest and home.

20. **HORN ON/OFF** – This key is used to sound the horn for ½ second.

21. **CLOCK ON/OFF** – This key is used to start and stop the clock.

22. **NEW GAME** – This key is used to reset all the scoreboard functions to their default settings. To reset the scoreboard, press [NEW GAME]. The console LCD display will read:

```
RESET            YES  <1>
SCOREBOARD    NO  <0>
```

Press [1], [ENTER] on the control console. The scoreboard will reset its functions.

23. **QTR** – This key increments the quarter digit by 1.

24. **CLEAR** – This key clears the information being entered into the control console.

The optional goal lights are turned on when the horn sounds.

You should reset the scoreboard each time that it is turned on. Test out all the functions to ensure that the scoreboard is operating properly. **Electro-Mech Scoreboard Company strongly advises that you unplug the control console, disconnect the extension cable at the control console, and turn the power to the scoreboard off when the scoreboard is not in use**. **The control console can not turn the scoreboard off.** This action will help protect the scoreboard and control console from power surges and lightning strikes.

SERVICING THE SCOREBOARD

While your scoreboard was designed for years of trouble-free operation, some problems may occasionally occur. Our trained personnel at Electro-Mech Scoreboard Company are available to answer your questions from Monday to Friday during the hours of 8 AM to 5 PM Eastern Standard Time. Be sure to know your scoreboard model number when calling. Replacement parts are always available. Parts can be repaired at significant savings when compared to the price of new units. Our convenient toll free number is listed at the bottom of every page in this manual. Be sure to make note of the specific problems that your scoreboard is experiencing.

The scoreboard electronics for each cabinet can be accessed by removing the PERIOD panel. Figure 5 shows the layout of the scoreboard electronics.
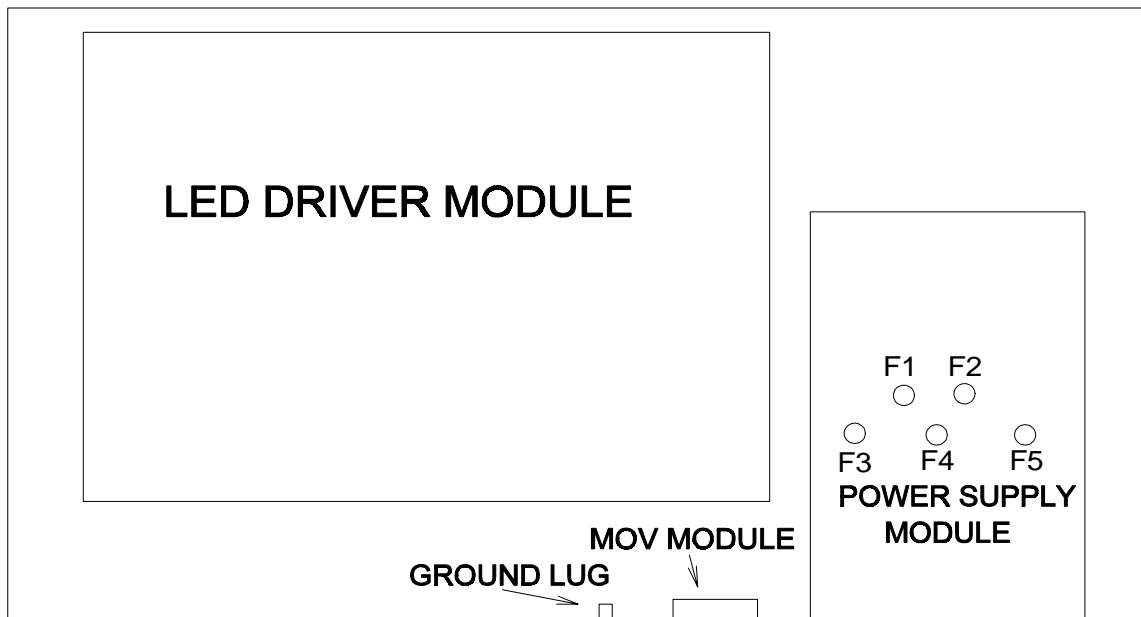

Figure 5 Scoreboard Electronics

The LDM1 LED DRIVER MODULE performs all scoreboard functions. The LPS-130VA POWER SUPPLY MODULE provides the power to all the scoreboard electronics. The MOV MODULE is used for surge protection.

The table below lists the fuses, the fuse ratings, and their functions.

FUSE NUMBER	FUSE RATING	FUNCTION
F1	5A 250 V	DC POWER INPUT #1
F2	5A 250 V	DC POWER INPUT #2
F3	1A 250V	GOAL LIGHTS
F4	1A 250V	HORN
F5	3A 250V	MAIN AC LINE

ELECTRO-MECH SCOREBOARD CO. FIVE YEAR LIMITED WARRANTY

THE ELECTRICAL COMPONENTS OF ALL ELECTRO-MECH SCOREBOARDS ARE GUARANTEED FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF INVOICE AGAINST DEFECTS IN WORKMANSHIP OR MATERIAL AND WILL BE REPLACED OR REPAIRED WITHOUT COST TO THE OWNER PROVIDED THE EQUIPMENT OR PARTS ARE RETURNED POSTAGE-PAID TO THE FACTORY IN WRIGHTSVILLE, GA. SHIPPING BACK TO THE OWNER WILL BE VIA UPS GROUND SERVICE EXCEPT WHEN AIR OR SPECIAL METHOD OF RETURN IS SPECIFIED BY THE OWNER, IN WHICH CASE SHIPPING WILL BE FREIGHT COLLECT.

EXCLUDED FROM THIS WARRANTY ARE FUSES.

THIS WARRANTY DOES NOT INCLUDE LABOR CHARGES INCURRED IN THE REMOVAL OF COMPONENT PARTS, SERVICE CALLS, OR DAMAGES RESULTING FROM IMPROPER INSTALLATION, IMPROPER OPERATION, OR PROBLEMS CAUSED BY ANY REPAIR, ALTERATION OR MODIFICATION OF THE SCOREBOARD NOT PERFORMED BY ELECTRO-MECH.

EQUIPMENT WHICH IS SUBJECTED TO ACCIDENT, NEGLECT, ABUSE, MISUSE OR OTHER NATURAL DISASTERS, INCLUDING BUT NOT LIMITED TO FIRE, WIND, LIGHTNING, OR FLOOD, IS NOT COVERED BY THIS GUARANTEE.