



Owner's Handbook for  
**Model 3740**  
Outdoor LED Football Scoreboard



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

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## Model 3740 Scoreboard Specifications

**GENERAL:** This scoreboard system includes the scoreboard cabinet, a horn, mounting hardware, control console, 10 ft. extension cable, and junction box.

**DIMENSIONS:** Overall scoreboard package is 32 ft. L x 8 ft. H x 6 in. D shipped in two sections, one approximately 5 feet tall and one approximately 3 feet tall.

**WEIGHT:** Overall scoreboard package is 900 lbs shipped in two sections (top section 500 lbs., bottom section 400 lbs.). Optional Electronic Team Names increase the top section weight to 700 lbs. and the overall weight to 1100 lbs.

**SCOREBOARD CONSTRUCTION:** The scoreboard consists of two cabinets. 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 and masks are finished with enamel paint. The captions are exterior grade vinyl.

**DISPLAY:** The Model 3740 football scoreboard displays Guest and Home Scores, Ball On, and Yards To Go to 99, Game Time to 99 minutes and 59 seconds (99:59), Down and Qtr. to 4, Guest and Home Time Outs Left (TOL) to 3, and Guest and Home Possession Indicators. Optional Electronic Team Names show text, numbers, and other characters.

**DIGITS AND INDICATORS:** Red or amber light emitting diodes (LEDs) mounted on printed circuit boards form the digits and indicators. The Score and Game Clock digits are 30 inches tall. The Home and Guest Time Outs Left (TOL) digits are 18 inches tall. All other digits are 24 inches tall. Light emitting diodes arranged in the shape of a football form the Possession indicators.

**ELECTRONIC TEAM NAMES (optional):** 20mm pitch, 16x112 pixel full color LED message centers allow for characters up to 13 inches tall.

**POWER REQUIREMENTS:** Scoreboard - 120 VAC, 3.0 A, 60 Hz. Control Console - 120 VAC, 0.5 A, 60 Hz.

**SCOREBOARD ELECTRONICS:** 100% solid state fully enclosed.

**CONTROL CONSOLE:** The control console features an internal microprocessor, 37-key sealed membrane keypad, LCD display, attached 6-foot power cord, and outputs for up to four scoreboard displays. The console housing consists of ABS plastic base and top pieces with a steel back plate. Optional Electronic Team Names are controlled by a PC running custom software.

**JUNCTION BOX AND EXTENSION CABLE:** A 4-1/4-inch x 2-1/4-inch x 2-inch junction box with a 1/4-inch stereo jack mounted on the face plate is attached to the control cable at the point of operation. A 10 ft. extension cable connects the control console to the junction box.

**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 is direct burial rated and has a diameter of approximately 1/4 inch. This item is sold separately from the scoreboard.

**SCORELINK RF MODEM SYSTEM:** This accessory can be used in place of the control cable and junction box for this scoreboard without internal modifications to the scoreboard or the control console. Refer to the SCORELINK RF MODEM SYSTEM OWNER'S HANDBOOK for more information.

**WARRANTY:** Five-year limited warranty.

## Scoreboard Installation

### Additional Materials and Considerations

One of the items listed below must be purchased in order to complete the installation:

- Control cable (length dependent upon installation site layout)
- ScoreLink RF Modem System

Items not provided by Electro-Mech Scoreboard Company that are necessary for installation:

- Mounting posts
- Power cable to connect the scoreboard to the power source
- Grounding hardware
- Conduit and conduit fittings
- A grounded NEMA 5-15R 120 VAC receptacle for the control console at the scorekeeper's table.

Items not provided that are recommended by Electro-Mech Scoreboard Company for installation:

- A weatherproof power disconnect at the scoreboard

Please consult national and local codes before beginning your installation. Electronic signs such as scoreboards can be subject to restrictions in some areas. Some communities require paperwork as simple as a building permit from the city clerk or as complicated as a stamped drawing from a licensed professional engineer. Electro-Mech will provide technical support to answer your installation questions and cooperate with the people involved in your installation process.

Qualified personnel should perform the scoreboard installation.

### Mechanical Installation

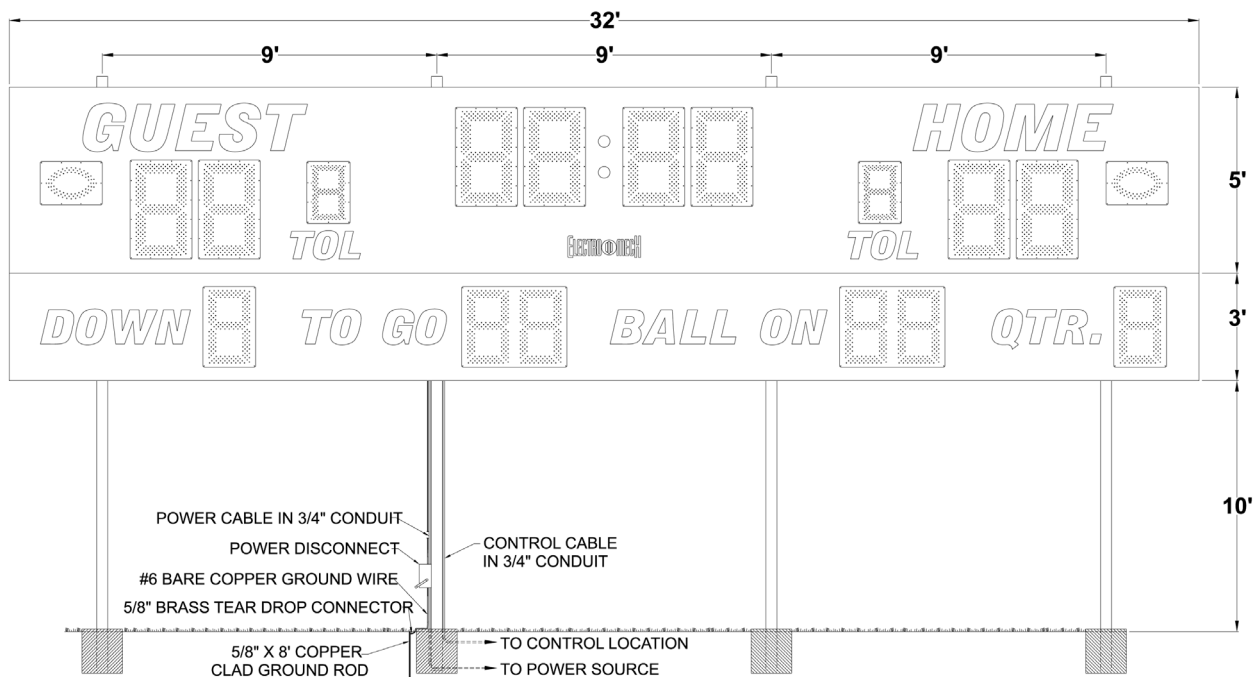
The mechanical installation includes installing the posts and mounting the scoreboard and the optional ID panels (if purchased) to the posts.

## Post Installation

The scoreboard, in its standard configuration, mounts on four posts using the spacing shown in the diagram below. Typically installers will use steel pipes or I-beams. The mounting hardware will accommodate posts up to 7 inches outer diameter. In order to reduce the glare from the sun on the front of the scoreboard, position the posts so that the front of the scoreboard is angled away from the afternoon sun, if possible.

Sink the posts in reinforced concrete footings. The specifications for the posts and concrete footings are dependent upon the expected local wind and soil conditions, the height of the scoreboard from the ground, and the local building codes.

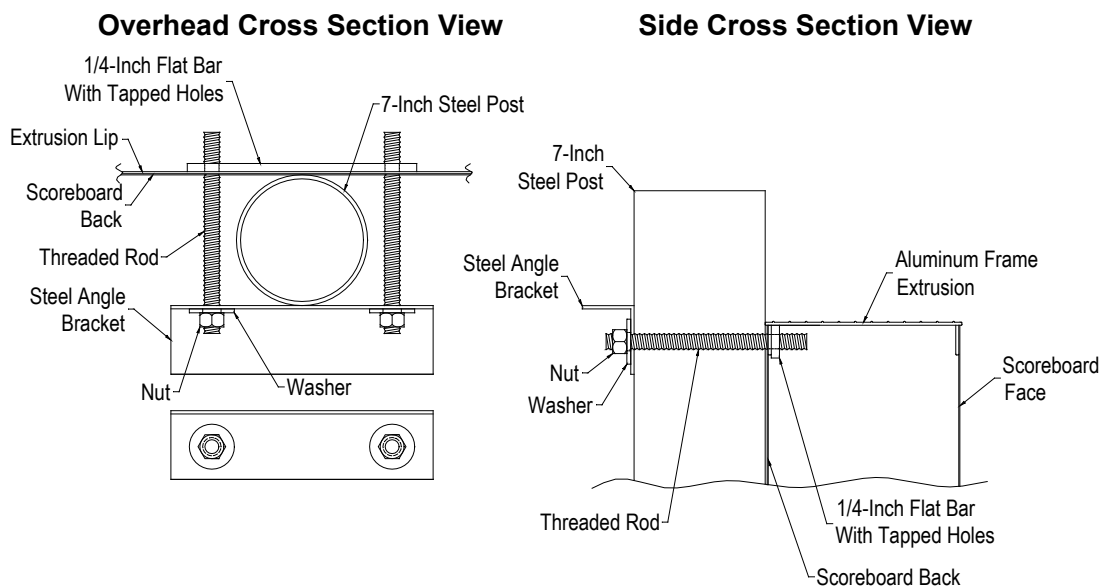
Electro-Mech Scoreboard Company assumes no responsibility for the installation of scoreboards by others.



## Model 3740 Post Spacing

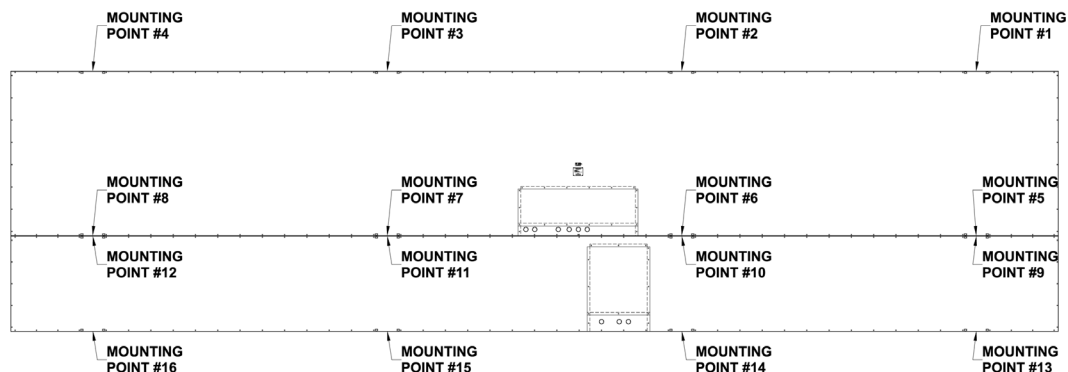
## Mounting Hardware

Sixteen sets of mounting hardware are provided to attach the scoreboard at these points. Additional hardware sets are provided to attach the optional ID panels, if ordered. A single set of mounting hardware consists of a steel angle bracket, two threaded rods, two washers, and two nuts. The diagram below shows an overhead cross section view and a side cross section view of the scoreboard attached to a post at a mounting point. A steel bar is riveted inside the scoreboard's aluminum extrusion frame. The bar has two tapped holes. The threaded rods screw into these tapped holes. The washers and nuts are used to clamp the steel angle bracket against the steel post and hold the scoreboard in place.



## Mounting The Scoreboard

The scoreboard is attached to the posts at four points. The diagram below shows the location of the mounting points on the rear of the scoreboard.



## Mounting The Scoreboard (continued)

The following steps describe how to mount the scoreboard on the posts:

1. Place the scoreboard cabinet against the posts on the ground. Make sure the mounting points are aligned with the posts.
2. Screw the threaded rods into the tapped holes in the scoreboard.
3. Place a steel angle bracket over the threaded rods at a mounting point.
4. Place a washer over each threaded rod.
5. Screw the nuts onto the threaded rods so that the bracket is loosely held in place.
6. Repeat steps 2 - 5 at the other mounting points.
7. Raise the scoreboard into place and tighten the nuts to clamp the scoreboard in place on the posts.

Note: Be sure to leave enough space on the posts above the scoreboard for the optional top or bottom ID panel(s), if purchased.

## Mounting The Optional Top Or Bottom ID Panel

Additional hardware sets are provided to attach any optional top or bottom ID panels, if purchased. The following steps describe how to mount an ID panel on the posts:

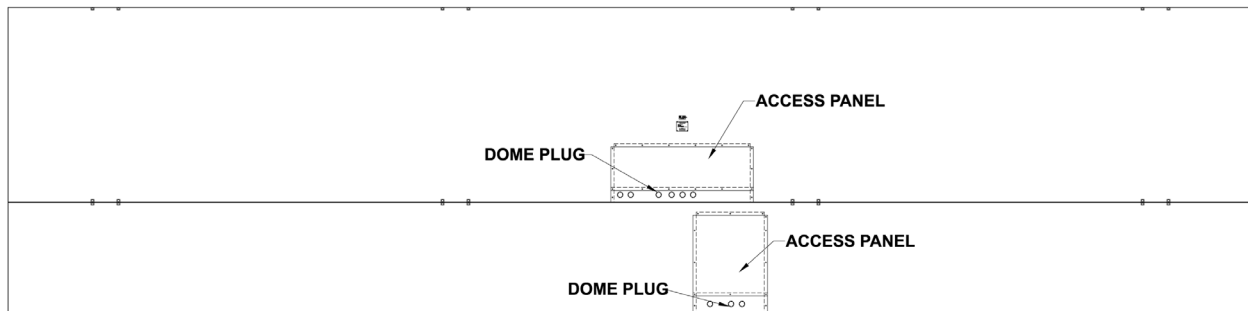
1. Raise the ID panel in place above or below the scoreboard. Make sure the mounting points are aligned with the posts.
2. Screw the threaded rods into the tapped holes in the ID panel.
3. Place a steel angle bracket over the threaded rods at a mounting point.
4. Place a washer over each threaded rod.
5. Screw a nut onto each threaded rod so that the bracket is loosely held in place.
6. Repeat steps 2 - 5 at the other mounting points.
7. Tighten the nuts to clamp the ID panel in place on the posts.



## Electrical Installation

We recommend a qualified electrician perform the needed electrical connections to ensure proper operation of the scoreboard. These connections include grounding the scoreboard, installing power and data interconnects between the upper and lower scoreboard cabinets, installing the horn, connecting the scoreboard to a power source, and connecting the control console.

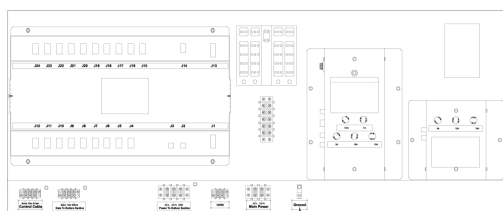
The back of the scoreboard includes knockouts (covered prior to shipment with removable dome plugs). These openings provide points of entry or exit for all cables. All connection points and serviceable parts are located behind removable access panels (one for the top cabinet and one for the bottom cabinet) just above each set of knockouts.



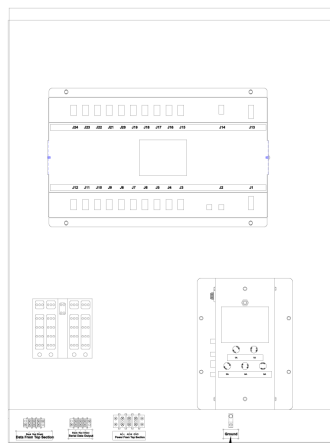
## Ground Connection

The National Electrical Code requires a scoreboard (electric sign) to be grounded. Grounding the scoreboard helps the scoreboard electronics operate properly and helps minimize damage if it is struck by lightning. Metal posts do not provide an adequate ground path. The following steps describe how to connect the scoreboard to the ground rods:

1. Drive one or more 5/8-inch x 8-foot copper clad ground rods in the soil near the scoreboard.
2. Connect #6 bare copper wire to the ground rods using 5/8-inch brass tear drop connectors.
3. Feed the ground conductor through one of the knockouts into the scoreboard cabinet.
4. Connect the ground conductors to the ground lug located behind the access panel.
5. Repeat this procedure for the other scoreboard cabinet.



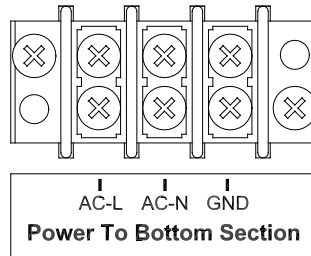
### TOP CHASSIS



### BOTTOM CHASSIS

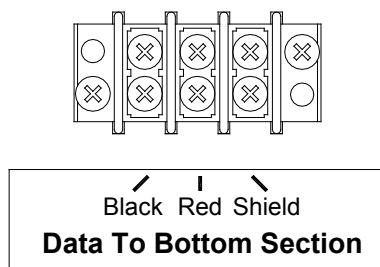
### Power Interconnection Between Scoreboard Cabinets

1. There is a cable in the lower cabinet's chassis attached to the terminal block labeled **Power from Top Section**. Feed this cable through one of the knockouts and out of the back of the lower cabinet.
2. Install the cable in conduit and feed the cable through one of the knockouts into the upper scoreboard cabinet.
3. Connect the cable to the terminal block labeled **Power to Bottom Section** according to figure below.



### Control Cable Interconnection Between Scoreboard Cabinets

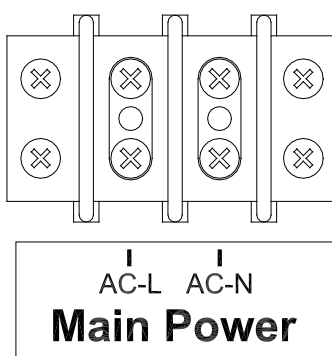
1. There is a cable in the lower cabinet's chassis attached to the terminal block labeled **Data from Top Section**. Feed the cable through one of the knockouts and out of the back of the lower cabinet.
2. Install the cable in conduit and feed the cable through one of the knockouts into the upper scoreboard cabinet. Avoid running data in through the same knockout or in the same conduit as power.
3. Connect the cable to the terminal block labeled **Data to Bottom Section**. Connect the black wire to the left terminal, the red wire to the middle terminal, and the shield wire to the right terminal.
4. This should complete your connections in the lower cabinet, so reinstall the lower access panel.



## Power Connection to Scoreboard

The scoreboard requires 120 VAC service at the scoreboard to operate properly. Maximum power consumption of Model 3740-ETN: 1400 Watts. Make sure your power cable is rated for this electrical load. Install the power cable in conduit. Avoid running the power cable in close proximity to the control cable. The following steps describe how to connect the scoreboard to the power source:

1. Feed the power cable through a knockout in the upper scoreboard cabinet.
2. Crimp fork terminals to the power cable wires.
3. Connect the AC line wire and AC neutral wire to the Main Power terminal block on the junction chassis.



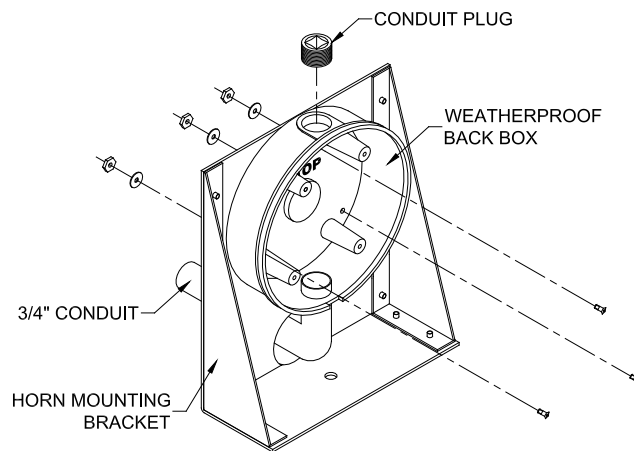
Install a power disconnect that isolates all current carrying conductors (not the ground conductor) on one of the posts below the scoreboard. If a secondary switch is installed near the scorekeeper's table, it should also isolate these conductors. Place the power disconnect in the OFF position between games to help protect the scoreboard from lightning damage. A power disconnect on the scoreboard post also provides a convenient way of turning the scoreboard off during maintenance or repairs.

## Horn Installation

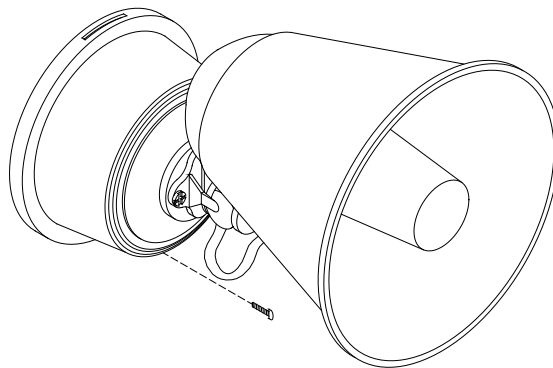
The items provided to install the horn are the horn itself, a weatherproof back box, mounting bolts, and a mounting bracket. Items which are not provided but are necessary for proper installation are 3/4-inch flexible conduit, a 3/4-inch right angle male conduit connector, a 3/4-inch straight male conduit connector, two wires, and four forked crimp terminals. The electrical requirements for the horn are 0.35 A 120 VAC.

The horn assembly is attached to the left side of the scoreboard for models with top sponsor panels. These models have two tapped holes at the mounting point. Other models may have tapped holes on the left side of the scoreboard or have one tapped hole on the top of the scoreboard at the mounting point. Mounting bolts are screwed into the tapped holes at the factory. The following steps describe the assembly and mounting of the horn:

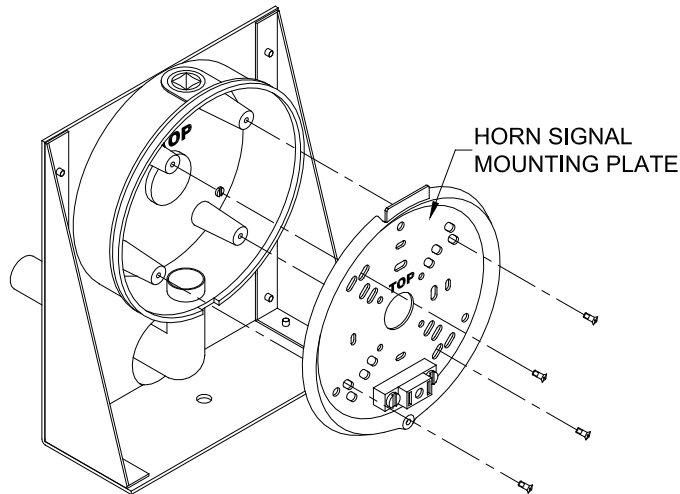
1. Remove the mounting bolts from the scoreboard.
2. Cut a piece of 3/4-inch conduit of sufficient length to reach from the horn mounting point to one of the knockouts in the upper scoreboard cabinet.
3. Attach the 3/4-inch right angle male conduit connector to one end of the conduit and the 3/4-inch straight male conduit connector to the other end.
4. Cut two pieces of wire of approximately 7 feet longer than the conduit.
5. Push the wires through the conduit.
6. Push the end of the conduit with the right angle male conduit connector through the 2-inch diameter hole in mounting bracket.
7. The weatherproof back box has two threaded conduit holes. Screw the provided conduit plug into the hole near the word "TOP" inside the weatherproof back box.
8. Feed the wires through the other back box conduit hole and screw the right angle conduit connector to the back box.
9. Attach the weatherproof back box to the mounting bracket using the provided 8-32 x 1/2" Phillips head machine screws, #8 split-lock washers, and 8-32 hex nuts.



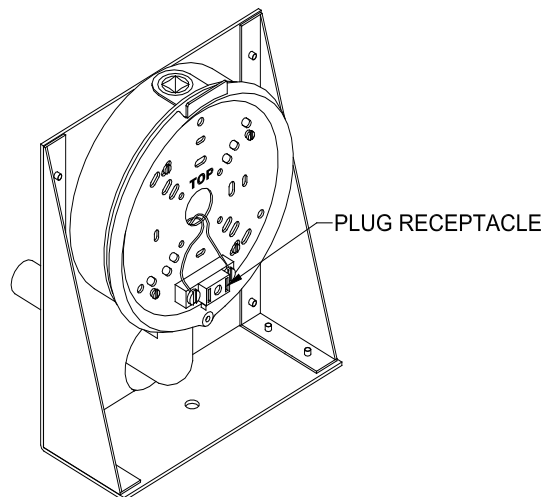
10. Remove the horn signal mounting plate from the horn base by loosening the Phillips head screw on the base.



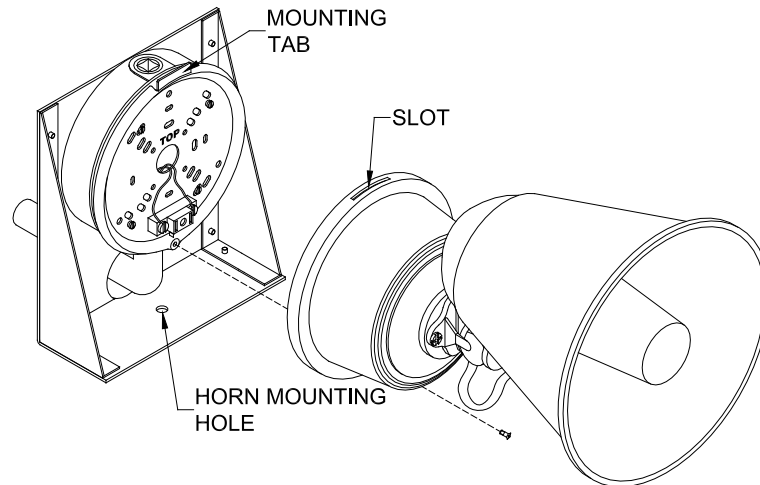
11. The word “TOP” is stamped on the front side of the horn signal mounting plate. Pass the two wires that are inside the back box through the horn signal mounting plate center hole from the rear.
12. Align the horn signal mounting plate with the back box so that the word “TOP” on the horn signal mounting plate and the back box should be oriented in the same direction and the screw hole on the bottom edge of the horn signal mounting plate should be directly over the gap in the back box gasket.



13. Fasten the horn signal mounting plate with the four 8-32 x 7/16” machine screws that are provided with the back box.
14. Crimp forked terminals on the ends of the two wires and attach them to the plug receptacle.



15. Slide the slot on the side of the horn base over the tab on the horn signal mounting plate and tighten the Phillips head screw on the other side of the horn base.
16. Fasten the horn assembly to the scoreboard using the mounting bolts from the scoreboard.

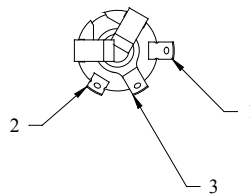


17. Crimp forked terminals on the ends of the two wires that protrude out of the other end of the conduit.
18. Pass the wires through one of the holes in the plate below the upper access panel.
19. Fasten the conduit connector to the plate and connect the wires to the terminal block labeled Horn. Connect the AC-L wire to the left terminal and the AC-N wire to the right terminal.

### Control Cable Installation (at the scoreboard)

The control cable connects the scoreboard to the control console. Install the control cable in conduit. If the cable is ever damaged, it is easier and less expensive to replace a cable in conduit. A small junction box with a 1/4-inch stereo jack mounted on the face plate is attached to the control cable at the point of operation of the scoreboard. This junction box should be securely mounted in a clean, dry area within ten feet of the rear of the control console. Most customers order the control cable with the junction box attached. Some customers prefer to attach the junction box after the cable is installed. Those customers must solder the control cable to the 1/4-inch stereo jack. The illustration below shows the control cable wire connection points on the rear of the 1/4-inch stereo jack.

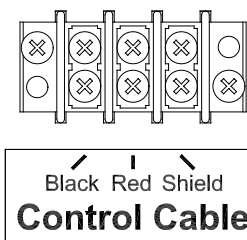
1/4" STEREO JACK



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

The following steps describe how to connect the control cable to the scoreboard:

1. Feed the control cable through one of the knockouts in the back of the upper scoreboard cabinet.
2. Crimp fork terminals to the two insulated control cable wires and the shield.
3. Connect the control cable to terminal block labeled Control Cable on the junction chassis.



When all connections have been made (ground, power, horn, control cable, ETN fiber, and interconnects between cabinets), reattach the access panels to the scoreboard cabinets.



**Control Cable Installation (at the point of operation)**

The 10 ft. extension cable has two molded 1/4-inch stereo plugs attached to it. It is used to connect the control console to the junction box. The following steps describe how to connect the control console:

1. Plug one end of the extension cable into the 1/4-inch stereo jack on the junction box (or the ScoreLink Transmitter, if purchased).
2. Plug the other end into one of the 1/4-inch stereo jacks mounted on the control console back plate.
3. Plug the control console power cord into a grounded NEMA 5-15R 120 VAC receptacle.

**Control Console Safety Warning**

This product is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a qualified electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.


## Scoreboard Operation

### Scoreboard Startup

1. Place the power disconnect for the scoreboard in the ON position.
2. Plug one end of the 10 ft. extension cable into the 1/4-inch stereo jack on the junction box (see ScoreLink owner's manual for details concerning the ScoreLink transmitter).
3. Plug the other end of the 10 ft. extension cable into the 1/4-inch stereo jack mounted on the control console back plate.
4. Plug the control console power cord into a grounded NEMA 5-15R 120 VAC receptacle.

### Game Time Operation

This scoreboard is operated with a 37-key control console.

				<div style="border: 1px solid black; width: 200px; height: 50px; margin: 0 auto;"></div>		
				FOOTBALL • SOCCER • TRACK		
SET CLOCK	SET CLOCK .1 SEC	.1 SEC ON / OFF	CLOCK UP / DOWN	7	8	9
DELAY OF GAME TIMER	AUTO HORN	TIME OF DAY	TIME OUT TIMER	4	5	6
				1	2	3
				CLEAR	0	ENTER
				<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NEW GAME</div> </div>		
SET GUEST SCORE	SET HOME SCORE	YARDS TO GO	BALL ON			
GUEST TIME OUTS	HOME TIME OUTS		DOWN			
GUEST SCORE +1	HOME SCORE +1	<div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">             POSS  <div style="display: flex; gap: 5px;"> <span>←</span> <span>→</span> </div> </div>		<div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">             HORN ON / OFF           </div>		<div style="border: 2px solid red; width: 50px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">             CLOCK ON / OFF           </div>

Immediately after the control console power cord is plugged into a 120 VAC source, the console LCD display will read:

ELECTRO-MECH 276
SCOREBOARD MPFB

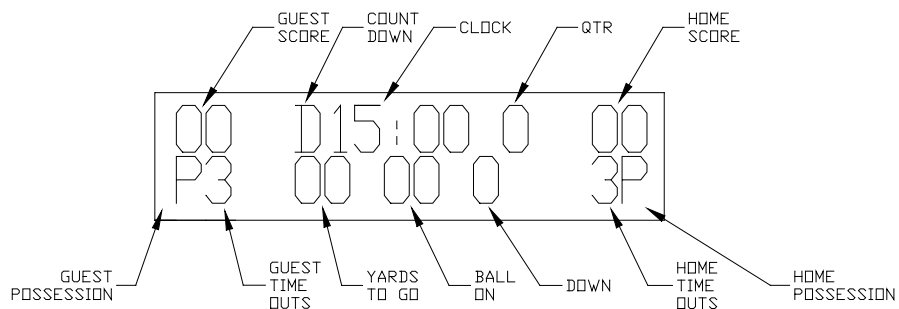
After a few seconds the display will read:

00	D15:00	0	00
3	00	00	0
			3

The scoreboard will display:

Guest Possession - Blank  
 Guest Score - 0  
 Guest Time Outs Left - 3  
 Game Clock – 15:00  
 Home Time Outs Left - 3  
 Home Score – 0  
 Home Possession - Blank  
 Down – Blank  
 To Go - 0  
 Ball On - 0  
 Qtr. - Blank

The control console LCD display shows the same information as the scoreboard. Note: In some functions a 0 will be blanked on the scoreboard, but not on the console. The figure below explains the layout of information on the LCD screen:



## Control Console Key Functions

1. SET CLOCK – This key sets the time displayed on the scoreboard Game Clock. Press [SET CLOCK]. The console LCD display will read:

```
00  D15:00 0  00
SET CLK <15:00>
```

Press the keypad numbers for the time, then [ENTER]. Example: Press [SET CLOCK] [6] [0] [0] [0] [ENTER] on the control console. 60:00 will be displayed on the scoreboard Game Clock.

2. SET CLOCK .1 SEC – This key is used to set the scoreboard Game Clock to a time less than one minute when tenth of a second accuracy is required. Press [SET CLOCK .1 SEC]. The console LCD display will read:

```
00  D15:00 0  00
SET SEC <00.0>
```

Press the keypad numbers for the time, then [ENTER]. Example: Press [SET CLOCK .1 SEC] [5] [3] [8] [ENTER] on the control console. 53.8 will be displayed on the scoreboard Game Clock.

3. .1 SEC ON/OFF – This key is used to enable or disable the display of tenths of seconds on the scoreboard Game Clock. The use of this key has a visible effect on the scoreboard only when the Game Clock displays less than one minute. 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 1/10th 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 Game Clock can be set up to either count up or count down. The control console is set to down-counting mode when it is turned on. To make the Game Clock count up, press [CLOCK UP / DOWN]. The console LCD display will read:

GAME	UP	<1>
CLOCK	DOWN	<0>

Press [1] [ENTER] on the control console. The letter D in front of the time display on the console LCD will be replaced with the letter U to indicate that the Game Clock is in up-counting mode. To reset the Game Clock to down-counting mode, press [CLOCK UP / DOWN] [0] [ENTER] on the control console.

5. DELAY OF GAME TIMER – The console can control a set of Delay of Game Timers (also called Play Clocks or 25-Second Clocks). The DGT reset time is preset to 25 seconds, but can be set to any time from 0 to 99 seconds. Changes to the DGT reset time should be made prior to the start of a game. To change the DGT reset time, press [SET DELAY OF GAME TIMER]. The console LCD display will read:

00	D15:00	0	00
DELAY TIME		<25>	

Use the keypad numbers to enter a new DGT reset time, followed by [ENTER]. Refer to the owner's manual of your Delay of Game Timer to learn about operation of the DGT displays.

6. AUTO HORN – This key allows the operator to control the End-Of-Period Horn and the Time-Out Horn. By default, the Horn sounds for two seconds when the Game Clock reaches 0:00 at the end of the period. The End-Of-Period Horn can be disabled by pressing [AUTO HORN]. The console LCD display will read:

GAME	<1>ON
HORN	<0>OFF

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

TO/DG	<1>ON
HORN	<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].

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:

```
00  C12:00 0  00
SET CLK <12:00>
```

Press the keypad numbers for the time, then [ENTER]. The letter C will be displayed on the console LCD display to the left of the time to indicate that the Time-Of-Day Clock is active. The scoreboard will display the time of day. **To return to the regular Game Clock mode, press [TIME OF DAY] [0] [ENTER].**

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

```
00  D15:00 0  00
SET T-O <1:00>
```

Press the keypad numbers for the time, then [ENTER]. The letter T will be displayed to the left of the time on the LCD display and the Time Out Timer immediately begins to count down to 0.

```
00  T 1:00 0  00
3   00 00 0   3
```

The scoreboard will not display the Time Out time. To exit the Time Out Timer function before 0, press [TIME OUT TIMER] [ENTER].

9. SET GUEST SCORE – To set the Guest Score, press [SET GUEST SCORE]. The console LCD display will read:

```
00  D15:00 0  00
SET  GUEST <00>
```

Press the keypad numbers for the score, then [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 console LCD display will read:

```
00  D15:00 0  00
SET  HOME   <00>
```

Press the keypad numbers for the score, then [ENTER]. Example: To set the Home Score to 75, press [SET HOME SCORE] [7] [5] [ENTER].

11. YARDS TO GO – To set the Yards To Go, press [YARDS TO GO]. The console LCD display will read:

```
00  D15:00 0  00
YARDS TO GO <00>
```

Press the keypad numbers for the yards, then [ENTER]. Example: To set the Yards To Go to 10, press [YARDS TO GO] [1] [0] [ENTER].

12. BALL ON – To display the position of the ball on the field, press [BALL ON]. The console LCD display will read:

```
00  D15:00 0  00
BALL ON      <00>
```

Press the keypad numbers for the position, then [ENTER]. Example: To display that the ball is on the 35 yard line, press [BALL ON] [3] [5] [ENTER].

13. GUEST TIME OUTS – This key decrements the Guest Time Outs by 1.
14. HOME TIME OUTS – This key decrements the Home Time Outs by 1.
15. DOWN – This key increments the Down by 1. If this key is pressed when Down displays 4, the digit on the scoreboard will be blanked.
16. GUEST SCORE +1 – This key increments the Guest Score by 1.
17. HOME SCORE +1 – This key increments the Home Score by 1.
18. POSS – This key toggles the Possession Indicators between Guest and Home. You may hold the key for one second to blank both Possession Indicators.
19. HORN ON/OFF – This key is used to sound the Horn for 1/2 second.
20. CLOCK ON/OFF – This key is used to start and stop the Game Clock.
21. QTR. / PERIOD – This key is used to increment the Quarter by 1.
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.

You should reset the scoreboard each time it is turned on. Test out all the functions to ensure that the scoreboard is operating properly.

### Hand-Held Clock Start/Stop Switch

Because the Game Clock is often controlled by a separate official, Electro-Mech offers a hand-held switch to start and stop the Clock. This pendant switch includes a cable and connector that plugs into an RJ-45 socket on the back of the control console. Just plug in the hand-held assembly and use the button to toggle the Game Clock on and off.



### Scoreboard Shutdown

1. Place the power disconnect for the scoreboard in the OFF position.
2. Unplug the control console power cord.
3. Unplug the extension cable.
4. Store the control console in a dry location. This unit is not waterproof.

Proper scoreboard shutdown 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. Electro-Mech provides free technical support for the life of our products. Our trained technicians are ready to answer your questions via our toll free number (800-445-7846) Monday through Friday from 8 AM to 5 PM Eastern Standard Time. Be sure to know the model of your scoreboard when calling for technical support. If the scoreboard turns on but does not operate normally, make note of which functions are affected. If some LEDs either never turn on or always stay on, make note of their specific locations on the scoreboard.

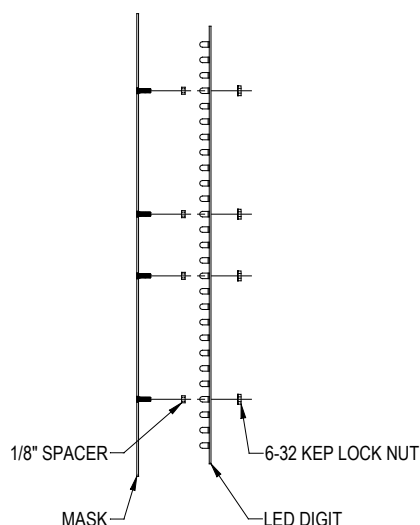
Electro-Mech keeps most common replacement parts in stock. Damaged parts can usually be repaired at a significant cost savings. Please review the information below before removing or replacing any of the electronic parts in your scoreboard.

## Component Replacement

Digits are accessible through the front of the scoreboard. All other serviceable parts are behind the access panels in the back of the scoreboard.

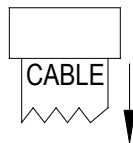
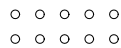
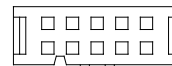
### Replacement of LED Digits and Indicators

The LEDs that form digits and indicators are soldered on circuit boards mounted behind metal masks. Do not attempt to replace individual LEDs. In case of a malfunction, the entire LED circuit board must be removed. **To avoid damage to the LED driver module, always turn off the power to the scoreboard when removing or replacing LED displays.** The illustration below shows the components of an LED digit assembly. Possession indicators are similar in construction.



1. Remove the sheet metal screws that fasten the mask to the face of the scoreboard. **Caution: Support the mask before removing the last screw. The ribbon cable that connects to the rear of the circuit board is not designed to support the weight of the assembly.**
2. Disconnect the ribbon cable from the rear of the circuit board. **Caution: Do not let the cable hang outside of the scoreboard. It is easily cut by sharp metal edges. Damage to the ribbon cable may create short circuit paths that will damage the LED driver module.**
3. Place the assembly on a flat surface and remove the 6-32 kee lock nuts that hold the circuit board in place.
4. Remove the old circuit board.
5. Align the mounting holes in the new circuit board with the threaded studs on the mask and install the replacement circuit board on the mask.
6. Plug the ribbon cable onto the header on the back of the circuit board. The figure below provides guidance for plugging the ribbon cable IDC connector onto the circuit board in the proper orientation.

## LED DIGIT HEADER

RIBBON CABLE  
IDC SOCKET

CENTER KEY

CENTER KEY ON RIBBON CABLE IDC SOCKET  
MUST POINT IN THE SAME DIRECTION AS THE  
ARROW ON THE REAR OF THE LED DIGIT.

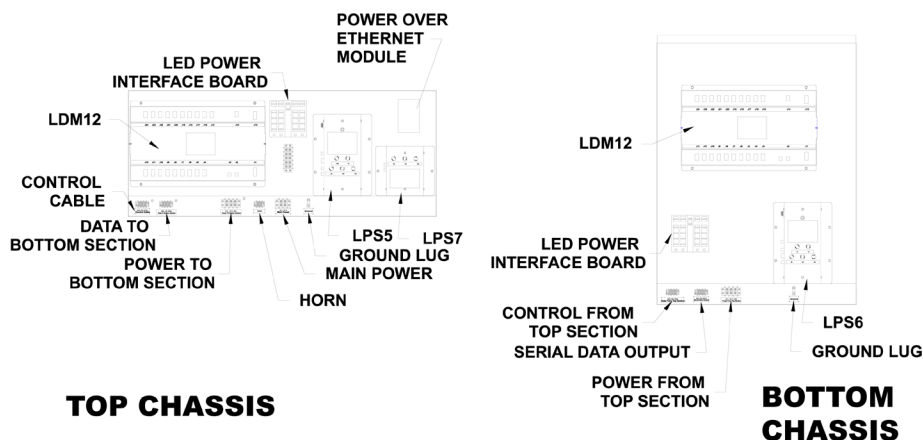
## Replacement of LED Driver Modules

The "brains" within the scoreboard cabinets are the LED Driver Modules, which are printed circuit boards housed in aluminum containers labeled LDM12. There is one LDM12 located behind the access panel of each cabinet. Electrical connections to the LDM12 LED Driver Modules are made with ribbon cable polarized IDC sockets and locking ramp crimp terminal housings that mate with jacks on the module. Each module is secured inside the scoreboard with four to six machine screws.

1. Unplug the electrical connections from the module. **Do not cut the plastic tie wraps around the ribbon cables.**
2. Remove the mounting screws.
3. Remove the module from the scoreboard.
4. Insert the replacement module in the scoreboard.
5. Secure the module with the mounting screws.
6. Insert the plugs into the jacks on the module.

**To avoid damage to the module, always turn off the power to the scoreboard when removing or replacing it.**

Table of LDM12 Driver Module Functions			
Jack ID	Function	Jack ID	Function
J1	DC Power Input #1	J13	DC Power Input #2
J2	Serial Data Input	J14	Horn Relay Control
J3	Serial Data Output	J15	
J4	Game Clock Seconds Units	J16	Qtr. / Period
J5	Game Clock Seconds Tens	J17	Game Clock Minutes Tens
J6	Game Clock Minutes Units	J18	
J7	Home Score Units	J19	
J8	Home Score Tens	J20	Guest Score Tens
J9	Guest Score Units	J21	Home Time Outs Left
J10	Yards To Go Units	J22	Down
J11	Yards To Go Tens	J23	Ball On Tens
J12	Ball On Units	J24	Guest Time Outs Left



## Replacement of LED Power Supply Modules

Electrical connections to the LED Power Supply Modules are made with keyed plugs that mate with jacks on the left side of the module. The modules are secured inside the scoreboard with four machine screws each.

1. Disconnect the plugs from the jacks on the side of the module.
2. Remove the four screws.
3. Remove the module from the scoreboard.
4. Insert the replacement module in the scoreboard.
5. Secure the module with the four screws.
6. Insert the plugs into the jacks on the side of the module.

**To avoid damage to the module, always turn off the power to the scoreboard when removing or replacing it.**

A relay inside the LPS5 Power Supply Module isolates the LDM12 LED Driver Module from the control cable when the scoreboard is shut down. Connecting the control console to the test jack on the LPS5 Power Supply Module (J5) with the 10 ft. extension cable bypasses this relay. This is useful for testing the scoreboard if communication problems occur. Always disconnect the control cable from its terminal block when connecting the control console to the scoreboard via the test jack.

Connecting the control console to LPS6 test jack (J5) with the 10 ft. extension cable enables the operation of the lower section of the scoreboard while bypassing the upper section. When using this feature, disconnect the cable wires that are connected to the bottom of the terminal block labeled **Data from Top Section**.

LPS5 Power Module Functions		
Fuse/Jack ID		Function
Fuse F1 (3A, 250V)		Transformer Primary
Fuse F2 (10A, 250V)		DC Power Output #1
Fuse F3 (10A, 250V)		DC Power Output #2
Fuse F4 (1/2A, 250V)		Serial Data Isolation Relay
Fuse F5 (1A, 250V)		Horn
Fuse F6 (1/2A, 250V)		120 VAC Receptacle
Jack J1		120 VAC Input
Jack J2		20 VDC Output
Jack J3		Serial Data Input/Output
Jack J4		Horn Control
Jack J5		Serial Data Test Jack

LPS6 Power Module Functions		
	Fuse/Jack ID	Function
	Fuse F1 (3A, 250V)	Transformer Primary
	Fuse F2 (10A, 250V)	DC Power Output #1
	Fuse F3 (10A, 250V)	DC Power Output #2
	Fuse F4 (1A, 250V)	Not used (relay 12 VDC)
	Fuse F5 (1A, 250V)	Not used (relay 12 VDC)
	Fuse F6 (1/2A, 250V)	120 VAC Receptacle
	Jack J1	120 VAC Input
	Jack J2	20 VDC Output
	Jack J3	Serial Data Input/Output
	Jack J4	Not used (12 VDC relays)
	Jack J5	Serial Data Test Jack

LPS7 Power Module Functions		
	Fuse/Jack ID	Function
	Fuse F1 (3A, 250V)	Transformer Primary
	Fuse F2 (10A, 250V)	DC Power Output #1
	Fuse F3 (10A, 250V)	DC Power Output #2
	Jack J1	120 VAC Input
	Jack J2	20 VDC Output

## Replacement of LED Power Interface Board

The LED Power Interface board distributes the output from the power supply modules to the LDM12 LED driver module and directly to some of the LED displays.

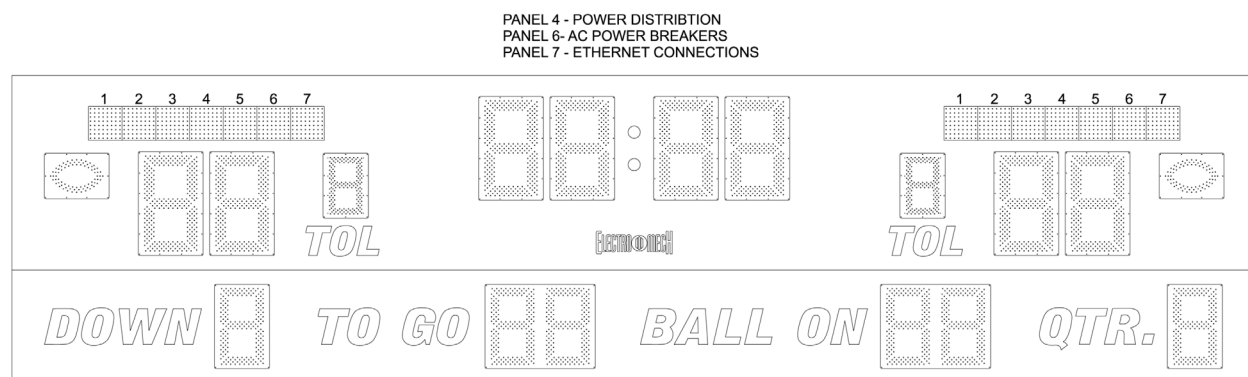
1. Unplug the wire assemblies from the jacks on the circuit board.
2. The circuit board is mounted on snap-in standoffs. Unseat the circuit board from the standoffs.
3. Press the replacement circuit board in place on the standoffs.
4. Plug the wire assemblies in the correct jacks on the circuit board. Each wire assembly is labeled to indicate the correct jack connection.

## Electronic Team Names

Your scoreboard features Electronic Team Name Message Centers that allow you to display custom text to identify the Guest and Home Teams. These ETN displays are similar to the other LED displays in the scoreboard and share the Main Power input terminal block with the other scoreboard electronics. Beyond this, the ETN displays are a separate subsystem from the rest of the scoreboard electronics and are discussed in detail in other documentation.

To service the Electronic Team Names, you'll need to need to know a few details about the way their parts are physically arranged in the scoreboard cabinet:

1. The ETN LEDs are mounted in removable plastic housings that are about 14 inches square. The screws that hold them in place (as well as the housings themselves) are front accessible
2. ETN Power modules and other components dedicated to the ETNs are located behind the ETN panels. Almost everything associated with the ETN displays is serviceable from the front of the scoreboard.
3. The only ETN-related component that is serviced from the rear of the scoreboard is the Power Over Ethernet Module, which can be found in the upper cabinet chassis behind the rear access panel.



## Warranty Statement

**Electro-Mech Scoreboard Company**  
**Standard Warranty and Limitation of Liability for Scoreboards and Video Displays**

### Warranty Coverage

Electro-Mech warrants to the original end-user that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of five years from the date of invoice.

Electro-Mech will provide on-site labor for Defects in materials and workmanship for one (1) year.

Electro-Mech's obligation under this Warranty is limited to, at Electro-Mech's option, replacing or repairing, any Equipment or part thereof that is found by Electro-Mech not to conform to the Equipment's specifications. Any defective part or component shall be returned to Electro-Mech for repair or replacement. Equipment determined not to conform to specifications will be repaired or replaced and returned to Purchaser with transportation charges prepaid.

Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment, and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend this Warranty Period.

Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. The limited warranty provided by Electro-Mech does not impose any duty or liability upon Electro-Mech for partial LED pixel degradation.

The Warranty does not provide for the replacement of communication methods including but not limited to, wireless systems, wire, fiber optic cable, conduit, or trenching for the purpose of overcoming local site interference.

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

### Exclusion from Warranty Coverage

The limited warranty provided by Electro-Mech does not impose any liability upon Electro-Mech for:

- Any damage caused by the unauthorized adjustment, repair or service of the Equipment by anyone other than personnel of Electro-Mech or its authorized repair agents.
- Damage caused by the failure to provide a continuously suitable environment, including, but not limited to (i) neglect or misuse (ii) a failure or surges of electrical power (iii) any other cause other than ordinary use.
- Damage caused by vandalism, fire, flood, earthquake, water, wind, lightning or other natural disaster, or any other cause beyond Electro-Mech's reasonable control.
- Any statements made about the product by salesmen, dealers, distributors, or agents, unless such statements are in a written document signed by an officer of Electro-Mech.

### Limitation of Liability

In no event shall Electro-Mech be liable for any special, consequential, incidental or exemplary damages arising out of or in any way connected the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, lost data, or injury to property, or any damages or sums paid by Purchaser to third parties.