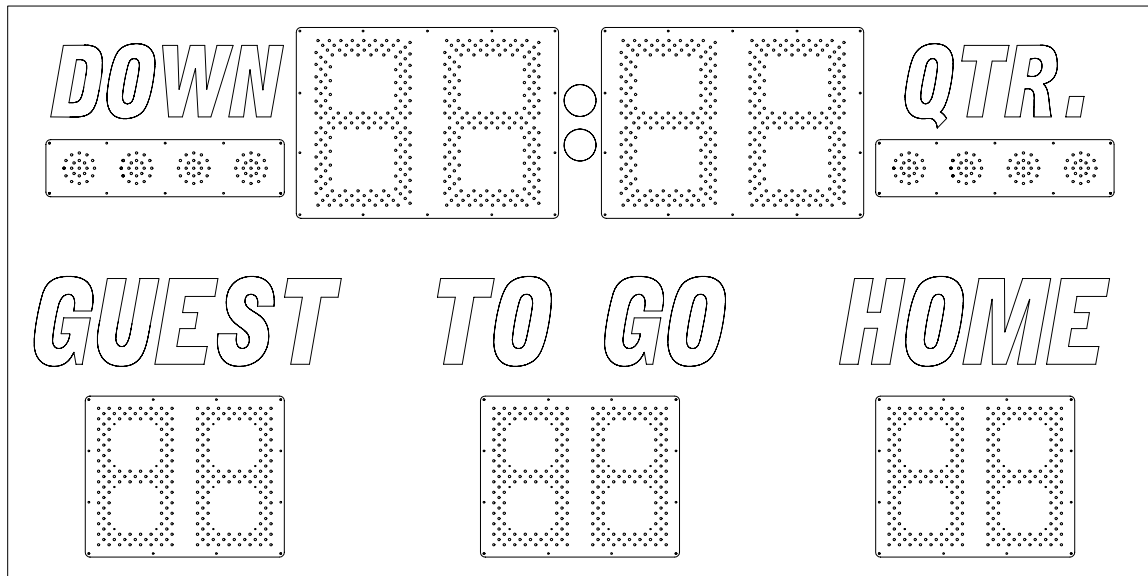

ELECTRO-MECH SCOREBOARD CO.



3150 FOOTBALL 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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SCOREBOARD SPECIFICATIONS

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

DIMENSIONS: 10' L x 5' H x 6" D (3150 with a side sponsor panel measures 14' L x 5' H x 6" D)

WEIGHT: 169 lbs (3150 with side sponsor panel: 214 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 and masks are finished with enamel paint. Black is the standard color. The captions are white exterior grade vinyl.

DISPLAY: The 3150 football scoreboard displays HOME and GUEST scores to 99, and YARDS TO GO to 60, TIME to 90 minutes, DOWN and QUARTER to 4.

DIGITS AND INDICATORS: Red light emitting diodes mounted on printed circuit boards form the digits and indicators. The TIME digits are 18" tall. The HOME scores, GUEST scores, and YARDS TO GO digits are 15" tall. Circular clusters of light emitting diodes form the 4" diameter DOWN and QUARTER indicators.

POWER REQUIREMENTS: Scoreboard - 120 VAC, 1.4 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 a microprocessor, 15 key sealed membrane keypad, an attached 6 foot power cord, and a lithium cell battery to retain game information. The console housing consists of ABS plastic base and top pieces with a steel back plate.

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 measures approximately 1/4" in diameter. This item is sold separately from the scoreboard.

JUNCTION BOX AND EXTENSION CABLE: A 4 1/4" x 2 1/4" x 2" junction box with a 1/4" 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.

SCORELINK 300 RF MODEM SYSTEM: This accessory can be used in place of control cable and junction box for this scoreboard without internal modifications to the scoreboard or the control console. Refer to the SCORELINK 300 RF MODEM SYSTEM OWNER'S HANDBOOK for more information.

WARRANTY: Five year limited warranty.

SCOREBOARD INSTALLATION

This part of the manual describes the mechanical and electrical installation of the scoreboard.

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

- Control cable (length dependent upon installation site layout)
- ScoreLink 300 RF Modem System

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

- Two posts
- Power cable to connect the scoreboard to the power source
- Grounding hardware
- 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

Electro-Mech Scoreboard Company performs installations in some areas. In other areas, we can help you contact an independent installer. In areas in which installation service is not available from Electro-Mech Scoreboard Company, we will make every effort to answer your installation questions. Qualified personnel should perform the scoreboard installation. Consult national and local codes before installation.

MECHANICAL INSTALLATION

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

Post Installation

The scoreboard mounts on two posts. Typically installers will use steel pipes or I-beams. 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. The mounting hardware will accommodate posts up to 4.5 inches outer diameter. Sink the posts in reinforced concrete footings. Figure 1 shows the spacing of the posts for a 3150 scoreboard. 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.

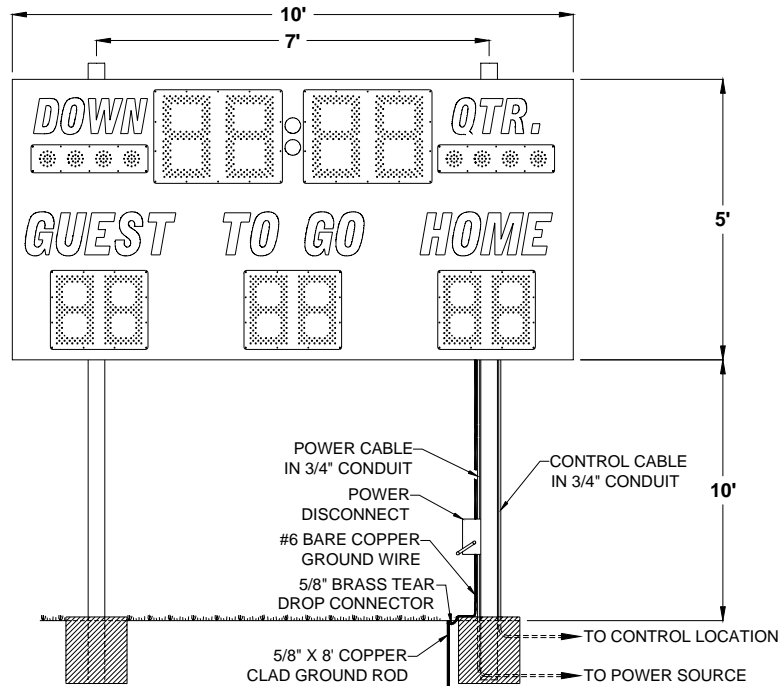


Figure 1 3150 Post Spacing

Figure 2 shows the spacing of the posts for a 3150 scoreboard with an optional side sponsor panel. The sponsor panel is built into the scoreboard cabinet.

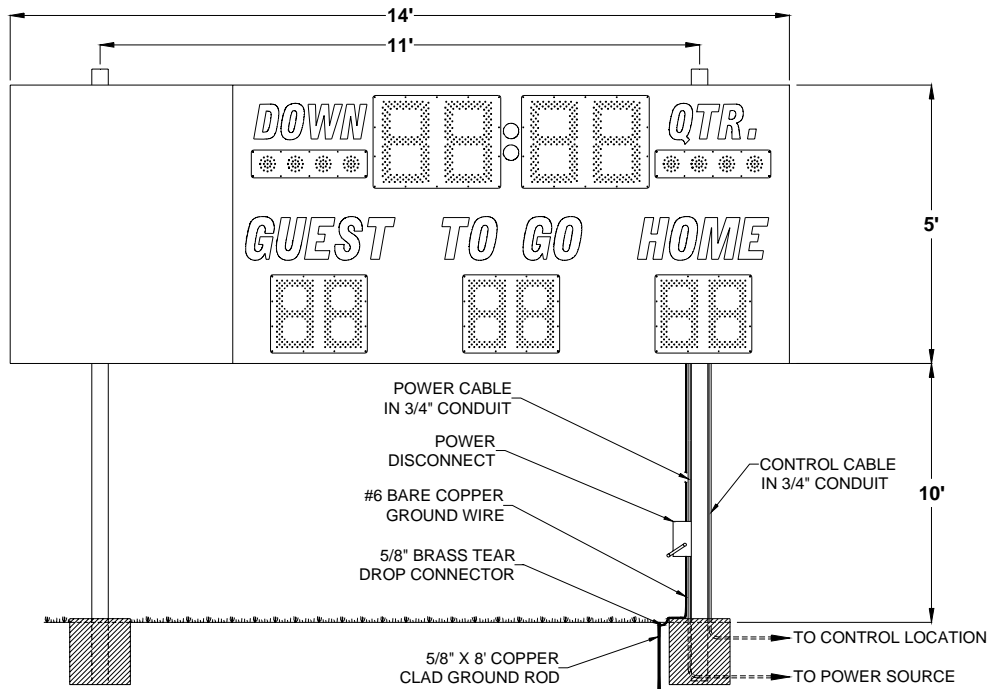


Figure 2 3150 with Side Sponsor Panel Post Spacing

Figure 3 shows the spacing of the posts for a 3150 scoreboard with an optional top sponsor panel. This panel is a separate unit that mounts on the same posts as the scoreboard.

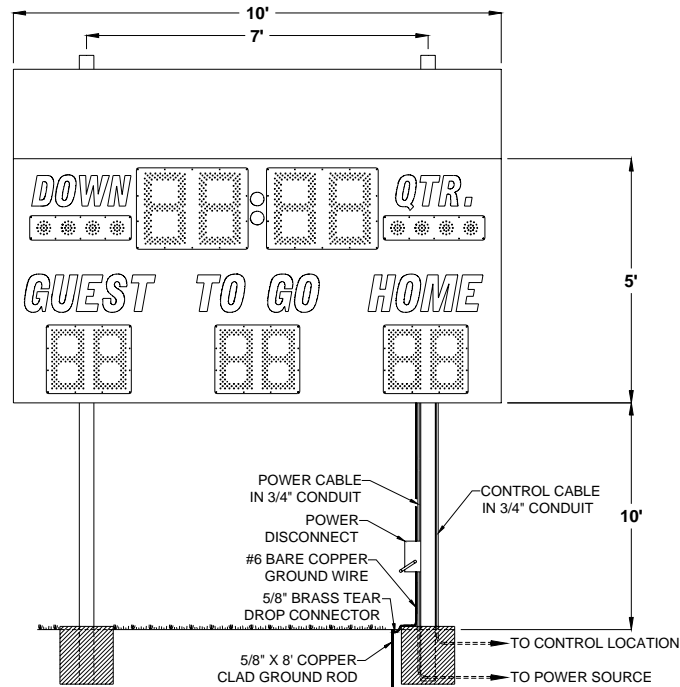


Figure 3 3150 with Top Sponsor Panel Post Spacing

Mounting The Scoreboard

The scoreboard is attached to the posts at four points. Figure 4 shows the location of the mounting points on the rear of the scoreboard.

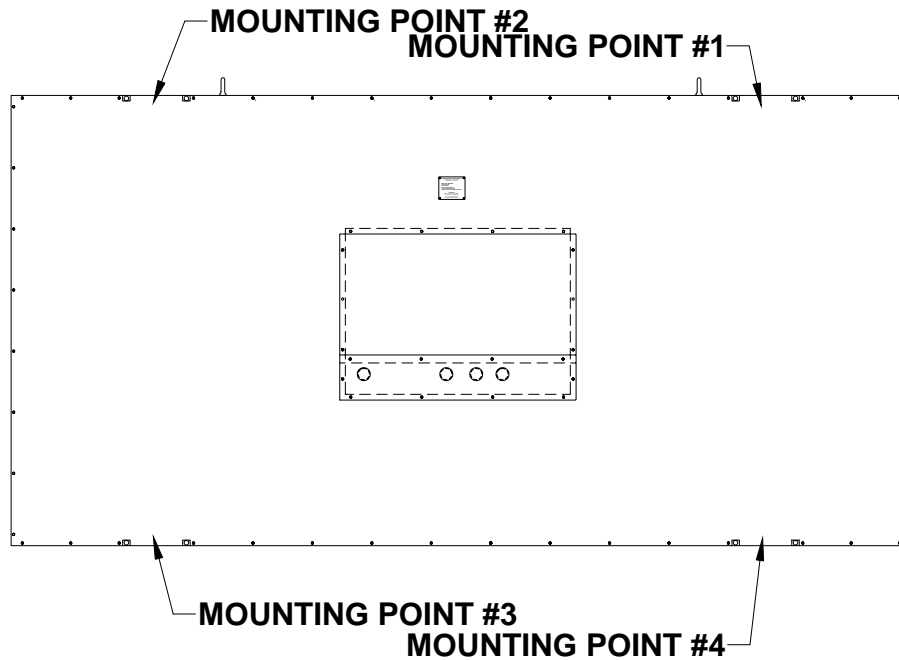


Figure 4 Mounting Points

MOUNTING HARDWARE

Four sets of mounting hardware are provided to attach the scoreboard at these points. Additional hardware sets are provided to attach the optional top sponsor panels, if ordered. A single set of mounting hardware for the scoreboard consists of an aluminum angle bracket, two threaded rods, two washers, and two nuts. A single set of mounting hardware for an optional top sponsor panel consists of an aluminum angle bracket, two threaded rods, four washers, and four nuts. Figure 5 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 aluminum angle bracket against the steel post and hold the scoreboard in place.

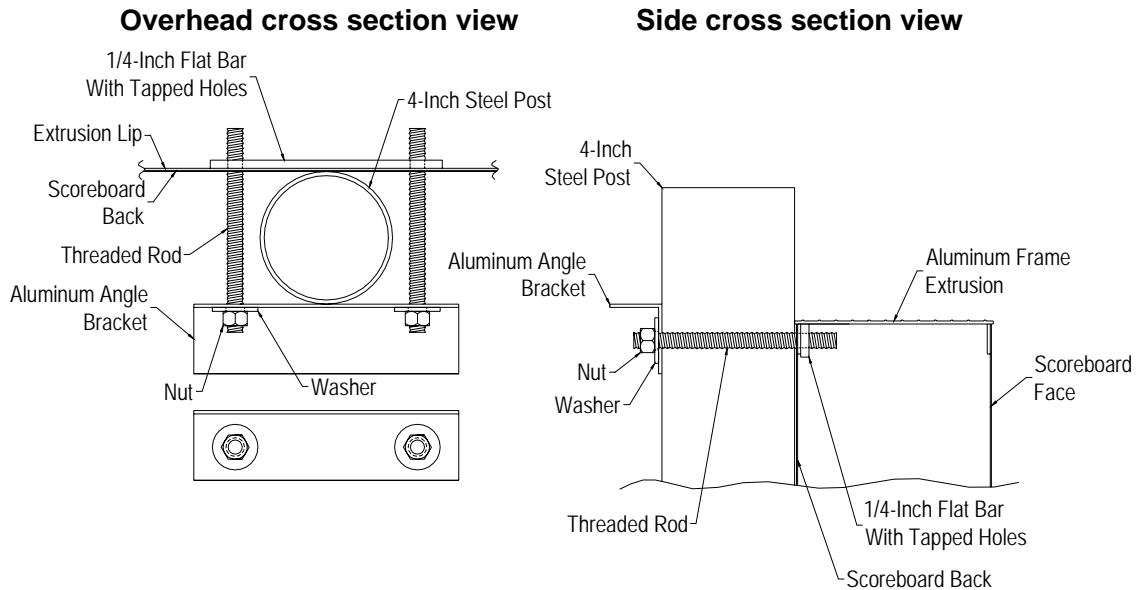


Figure 5 Standard Mounting Method

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 an aluminum angle bracket over the threaded rods at mounting point #1.
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 3 - 6 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 sponsor panel, if purchased.

Mounting The Optional Top Sponsor Panel

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

1. Raise the top sponsor panel in place above the scoreboard. Make sure the mounting points are aligned with the posts.
2. Place the threaded rods through the mounting holes in the top sponsor panel at one mounting point.
3. Place a washer over each threaded rod inside the frame of the top sponsor panel.
4. Screw a nut onto each threaded rod behind the washers inside the frame of the top sponsor panel.
5. Place an aluminum angle bracket over the threaded rods behind the post.
6. Place a washer over each threaded rod behind the bracket.
7. Screw a nut onto each threaded rod so that the bracket is loosely held in place.
8. Repeat steps 2 - 7 at the other mounting points.
9. Tighten the nuts to clamp it 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, connecting the scoreboard to a power source, installing the horn, installing the ScoreLink 300 or the control cable, and connecting the control console.

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 power source:

1. Drive one or more 5/8" x 8' copper clad ground rods in the soil near the scoreboard.
2. Connect #6 bare copper wire to the ground rods using 5/8" brass tear drop connectors.
3. Remove the rear access panel and the dome plugs on the plate below the access panel. Figure 6 shows the location of the access panel and the dome plugs.

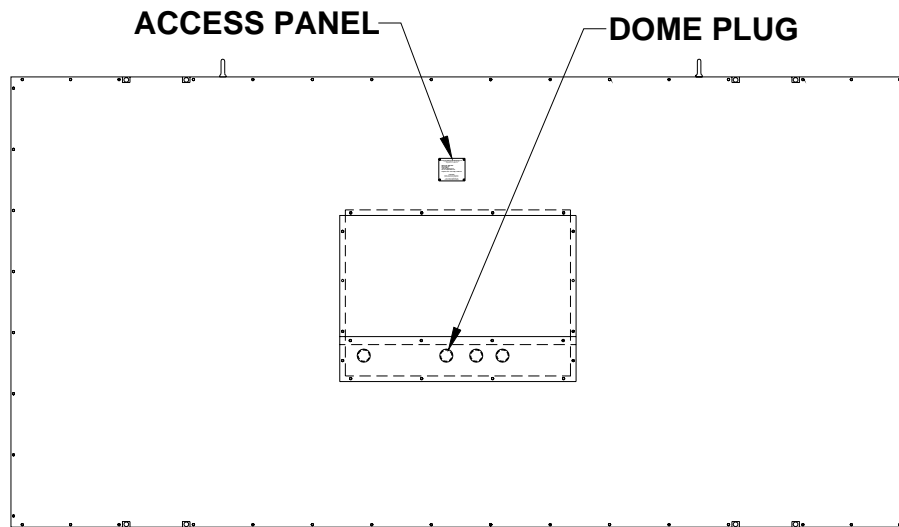


Figure 6 Rear Access Panel

4. Figure 7 shows the view behind the access panel.

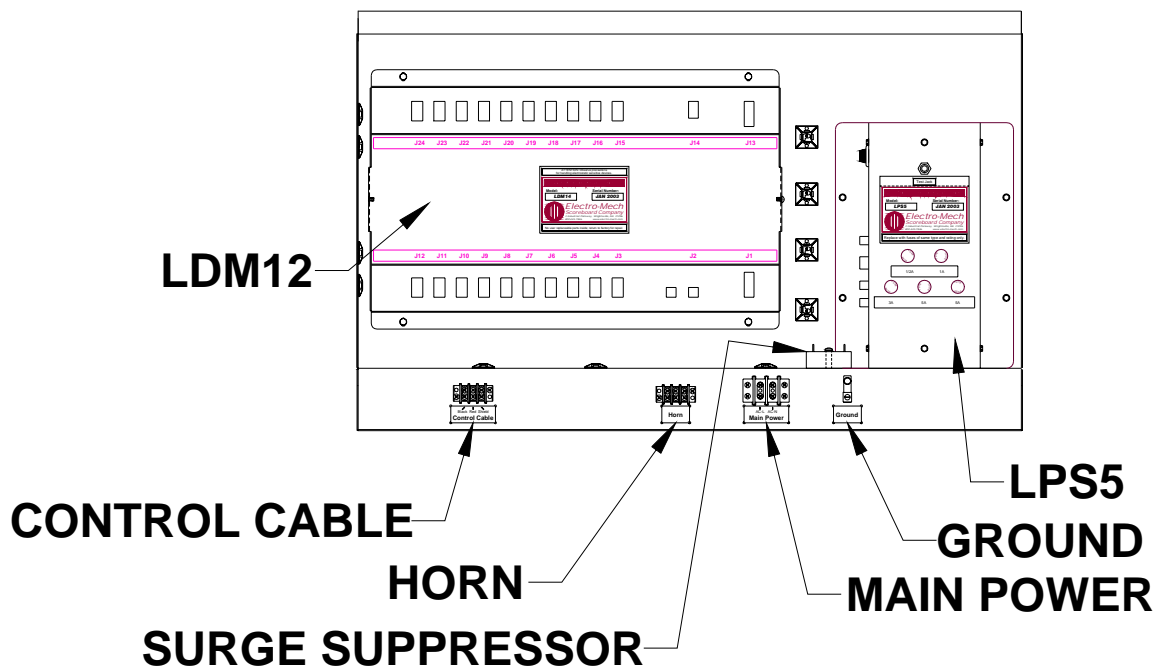


Figure 7 Access Panel Removed

5. Pass the ground conductor through the right hand hole in the plate below the access panel and connect it to the ground lug (**Ground**) on the junction chassis.

Power Connections

The scoreboard requires 120 VAC service at the scoreboard to operate properly.

Maximum power consumption of Model 3150: 168 Watts. Make sure that 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 cables through one of the holes in the plate below the access panel.
2. Crimp fork terminals to the power cable wires.
3. Connect the power cable wires to **Main Power** terminal block on the junction chassis according to figure 8.

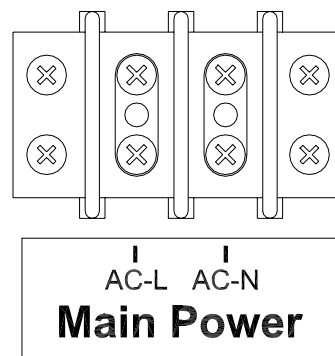


Figure 8 Power Connections

Install a power disconnect that isolates all current carrying conductors on one of the posts below the scoreboard (not the ground conductor). 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, the mounting bolt, and the mounting bracket. Items which are not provided but are necessary for proper installation are 3/4" conduit, a two 3/4" male conduit connectors, a 3/4" straight male conduit connector, two wires, two forked crimp terminals, and two butt splice connectors. The electrical requirements for the horn are 0.35 A 120 VAC. The horn is mounted to the top of the scoreboard. If a horn was purchased with the scoreboard, a tapped hole is provided to fasten the horn to the scoreboard. The mounting bolt is screwed into the tapped hole at the factory. The following steps describe the assembly and mounting of the horn:

1. Cut a piece of 3/4" conduit of sufficient length to reach from the horn mounting point to one of holes in the plate below the access panel.
2. Attach the conduit connectors to the ends of the conduit.
3. Cut two pieces of wire of approximately 4 feet longer than the conduit.
4. Push the wires through the conduit.

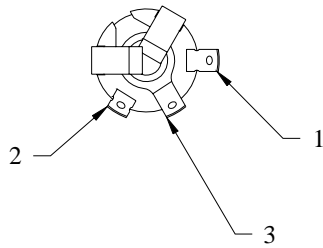
5. Peel the tape off the horn projector.
6. Remove the plastic bag from inside the horn projector.
7. Remove the four screws that fasten the horn and horn projector to the weatherproof back box.
8. Feed the two wire leads that are attached to the rear side of the horn through one of the threaded holes on the side of the weatherproof back box. Two of the holes will accept a 3/4" conduit connector.
9. Plug the other two threaded holes with the plugs from the plastic bag.
10. Splice the horn wire leads to the two wires that run through the conduit with the butt splice connectors.
11. Screw the conduit connector into the threaded hole on the weatherproof back box.
12. Attach the horn and horn projector to the weatherproof back box using the four screws.
13. Fasten the horn assembly to the scoreboard using the mounting bolt from the scoreboard.
14. Crimp forked terminals on the ends of the two wires that protrude out of the other end of the conduit.
15. Pass the wires through one of holes in the plate below the access panel.
16. Fasten the conduit connector to the plate and connect the wires to the **Horn** terminal block on the junction chassis. Connect the AC-L wire to the left terminal and the AC-N wire to the right terminal.

ScoreLink 300

The ScoreLink 300 RF MODEM SYSTEM is designed to eliminate the control cable between the scoreboard and the control console on Electro-Mech Scoreboard MM and MP series scoreboards as well as all LED scoreboards. If you have purchased this accessory, disregard the section of this manual titled **Control Cable Installation**. Refer to the ScoreLink 300 RF MODEM SYSTEM OWNER'S HANDBOOK for installation instructions.

Control Cable Installation

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" 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" stereo jack. Figure 9 shows the control cable wire connection points on the rear of the 1/4" stereo jack.



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

Figure 9 1/4" Stereo Jack Wiring Diagram

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

1. At the rear of the scoreboard feed the control cable through the left hole in the plate below the access panel.
2. Crimp fork terminals to the control cable wires and the shield.
3. Connect the control cable to **Control Cable** terminal block on the junction chassis according to figure 10.

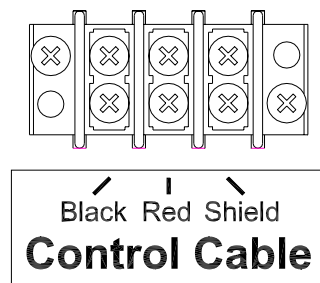


Figure 10 Control Cable Wiring Diagram

4. Reinstall the access panel.

Control Console Connections

The 10 ft. extension cable has two molded ¼” 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 ¼” stereo jack on the junction box or the ScoreLink 300 Transmitter, if purchased.
2. Plug the other end into the ¼” stereo jack 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 extension cable into ¼" stereo jack on the junction box or the ScoreLink 300 Transmitter, if purchased.
3. Plug the other end into the ¼" 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.
5. If a ScoreLink 300 RF MODEM SYSTEM is installed with this scoreboard, plug the wall mount DC power supply into a grounded NEMA 5-15R 120 VAC receptacle and the male plug on the end of the attached cable into the Power jack on the Transmitter.

GAME TIME OPERATION

This scoreboard is operated with a 15-key control console. Figure 11 shows the keypad layout on the control console.

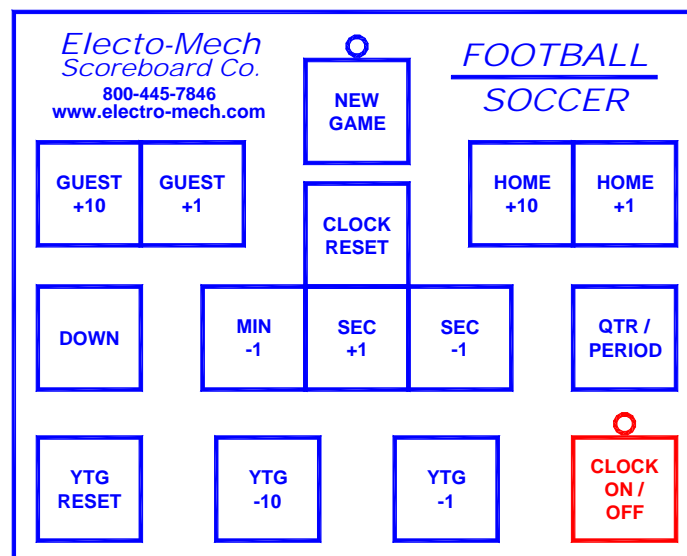


Figure 11 Keypad Layout

The scoreboard will display:

GUEST SCORE – 0

HOME SCORE – 0

CLOCK – 30:00

Control Console Key Functions

1. **GUEST +1** – This key increments the Guest score by 1.
2. **HOME +1** – This key increments the Home score by 1.
3. **GUEST +10** – This key increments the Guest score by 10.
4. **HOME + 10** – This key increments the Home scores by 10.
5. **DOWN** – This key increments the DOWN by 1.
6. **QTR / PERIOD** – This key increments the quarter indicator by 1.
7. **YTG RESET** – This key resets the Yards To Go to 60. This key must be used to initially display Yards To Go on the scoreboard.
8. **YTG -10** – This key decrements the Yards To Go by 10.
9. **YTG -1** – This key decrements the Yards To Go by 1.
10. **CLOCK ON/OFF** – This key toggles the clock on and off. When the clock is on, a red LED on the keypad above this key is illuminated. The horn sounds for two seconds when the game clock reaches 0 seconds.
11. **MIN -1** – This key decreases the clock by one minute.
12. **SEC +1** – This key increases the clock by one second.
13. **SEC -1** – This key decreases the clock by one second.
14. **CLOCK RESET** – This key is used to cycle the clock between the 15, 30, 60, and 90 minutes settings.
15. **NEW GAME** – This key can be used to reset all scoreboard functions. Press **NEW GAME** and, within two seconds, press **CLOCK RESET**.

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.

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. If a ScoreLink 300 RF MODEM SYSTEM is installed with this scoreboard, unplug the Transmitter's wall mount power supply.
5. Store the control console and ScoreLink 300 Transmitter in a dry location. These units are 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 Scoreboard Company offers onsite service in some areas. In other areas, we can help you contact an independent service technician. In areas in which service is not available from Electro-Mech Scoreboard Company, we will make every effort to answer your questions. Our trained personnel at Electro-Mech Scoreboard Company are ready 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. Scoreboard replacement parts are always available. Damaged parts can usually be repaired at a significant cost savings. Our convenient toll free number is listed at the bottom of every page in this manual.

TROUBLESHOOTING TIPS

Before calling Electro-Mech Scoreboard Co. for customer support of a scoreboard problem, it is helpful to make note of all the symptoms. If the scoreboard does not turn on digits, please check the following items:

1. Make sure the control console power cord and the extension cable are plugged in.
2. Verify that the red LED above the NEW GAME key on the control console keypad is lit.
3. Check the circuit breaker that supplies power to the scoreboard.
4. Remove the scoreboard rear access panel and check the voltages present at the **Main Power** terminal block.
5. Check the fuses on the LPS5 Power Supply Module.
6. Make sure all wire and ribbon cable connections are plugged in securely.
7. Take the control console and the 10 ft. extension cable to the scoreboard.

Temporarily disconnect the control cable from the **Control Cable** terminal block and plug the 10 ft. extension cable into the test jack on the LPS5 Power Supply Module. Plug the control console power cord into the 120 VAC receptacle on the left side of the LPS5 Power Supply Module. If the LEDs are now illuminated and the scoreboard reacts to control console entries, there may be a problem with the control cable or the ScoreLink 300 modem, if purchased.

If the scoreboard turns on LEDs, 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. Refer to the COMPONENT REPLACEMENT section of this manual before changing parts.

COMPONENT REPLACEMENT

LED digits and indicators are serviced from the front of the scoreboard.

LED Digits And Indicators Replacement

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 digits and indicators.** Figure 12 shows the components of a LED digit assembly. LED indicator assemblies are similar in construction.

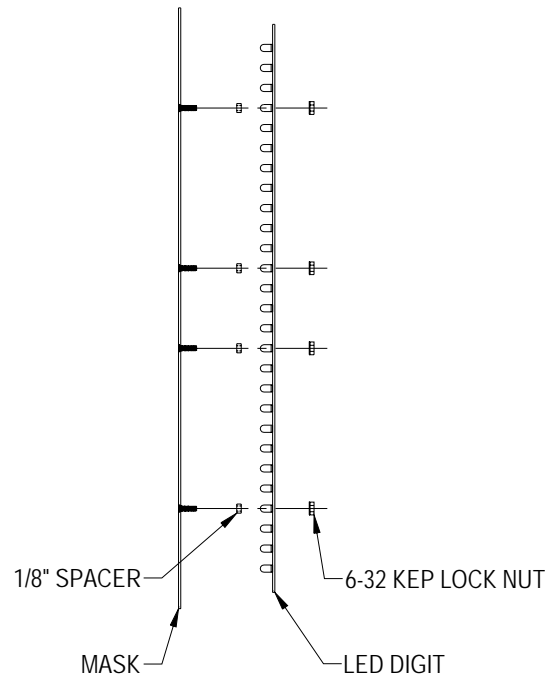
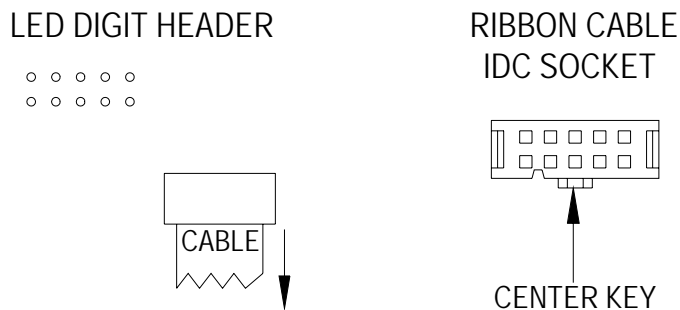


Figure 12 LED Digit Assembly

1. Remove the sheet metal screws that fasten the mask to the face of the scoreboard.
Caution: Support the mask with 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 circuit board.
5. Align the mounting holes in the circuit board with the threaded studs on the mask and install the replacement digit on the mask.

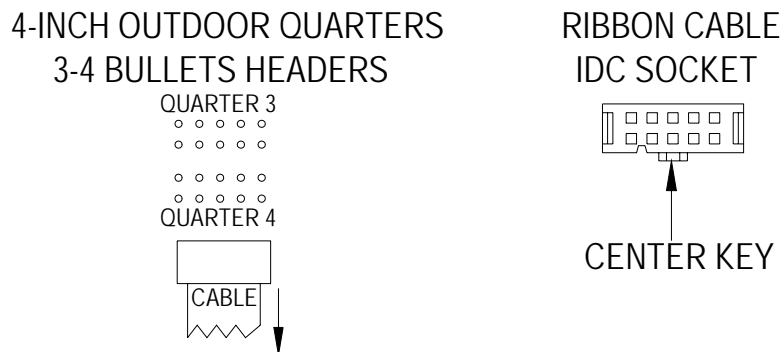
6. Plug the ribbon cable onto the header on the back of the circuit board. Refer to figure 13 in order to plug the ribbon cable IDC connector onto the circuit board in the proper orientation.



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

Figure 13 LED Digit Ribbon Cable Connection Diagram

7. The circuit board used for the QUARTERS 3 and 4 indicators has two headers. Refer to figure 14 in order to plug the ribbon cable IDC connector onto the correct header on the circuit board in the proper orientation.



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

Figure 14 Quarters 3 and 4 Indicators Ribbon Cable Connection Diagram

8. The circuit board used for the DOWN indicators has two headers. Refer to figure 15 in order to plug the ribbon cable IDC connector onto the correct header on the circuit board in the proper orientation.

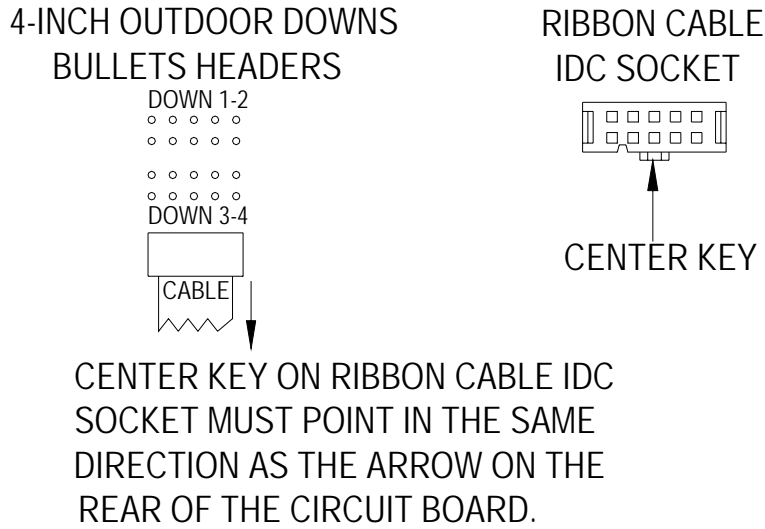


Figure 15 Down Indicators Ribbon Cable Connection Diagram

All other components are located behind the rear access panel. Figure 16 shows the view behind the access panel.

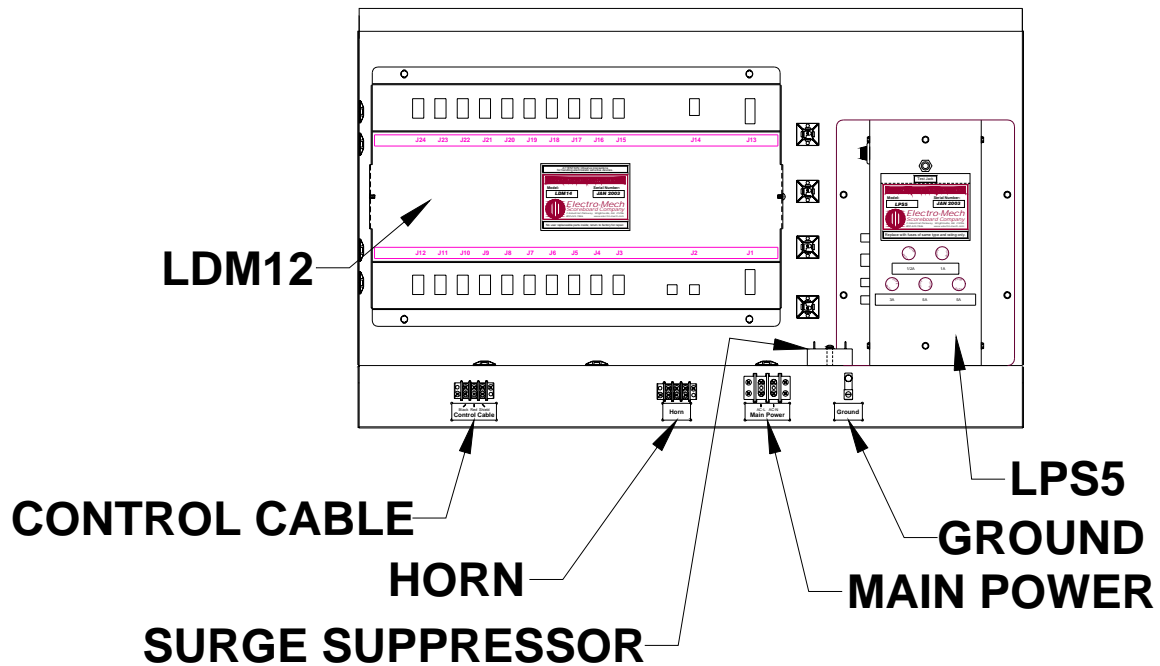


Figure 16 Access Panel Components

LDM12 LED DRIVER MODULE FUNCTIONS

DRIVER MODULE JACK	FUNCTION #1	FUNCTION #2	FUNCTION #3	FUNCTION #4
J1	DRIVER MODULE DC POWER INPUT #1			
J2	SERIAL DATA INPUT			
J3	SERIAL DATA OUTPUT			
J4	CLOCK SECONDS UNITS DIGIT			
J5	CLOCK SECONDS TENS DIGIT			
J6	CLOCK MINUTES UNITS DIGIT			
J7	HOME SCORE UNITS DIGIT			
J8	HOME SCORE TENS DIGIT			
J9	GUEST SCORE UNITS DIGIT			
J10	NOT USED			
J11	NOT USED			
J12	NOT USED			
J13	DRIVER MODULE DC POWER INPUT #2			
J14	HORN RELAY CONTROL			
J15	QUARTER 4			
J16	YARDS TO GO UNITS DIGIT			
J17	CLOCK MINUTES TENS DIGIT			
J18	NOT USED			
J19	YARDS TO GO TENS DIGIT			
J20	GUEST SCORE TENS DIGIT			
J21	QUARTER 3	QUARTER 1-2	DOWN 3-4	DOWN 1-2
J22	NOT USED			
J23	NOT USED			
J24	NOT USED			

LED Driver Module Replacement

Electrical connections to the LDM12 LED DRIVER MODULE are made with ribbon cable polarized IDC sockets and locking ramp crimp terminal housings that mate with jacks on the module. The module is secured inside the scoreboard with 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 six screws.
3. Remove the module from the scoreboard.
4. Insert the replacement module in the scoreboard.
5. Secure the module with the six 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.

LPS5 LED POWER SUPPLY MODULE FUNCTIONS

JACK	FUNCTION
J1	120 VAC INPUT
J2	20 VDC OUTPUT TO LED DRIVER MODULE
J3	SERIAL DATA INPUT / OUTPUT
J4	HORN CONTROL
J5	SERIAL DATA TEST JACK

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 J5 with the 10 ft. extension cable bypasses this relay. Figure 17 shows the location of the fuses in the LPS5 LED Power Supply Module. The table following the figure lists the fuse ratings, functions, and part numbers.

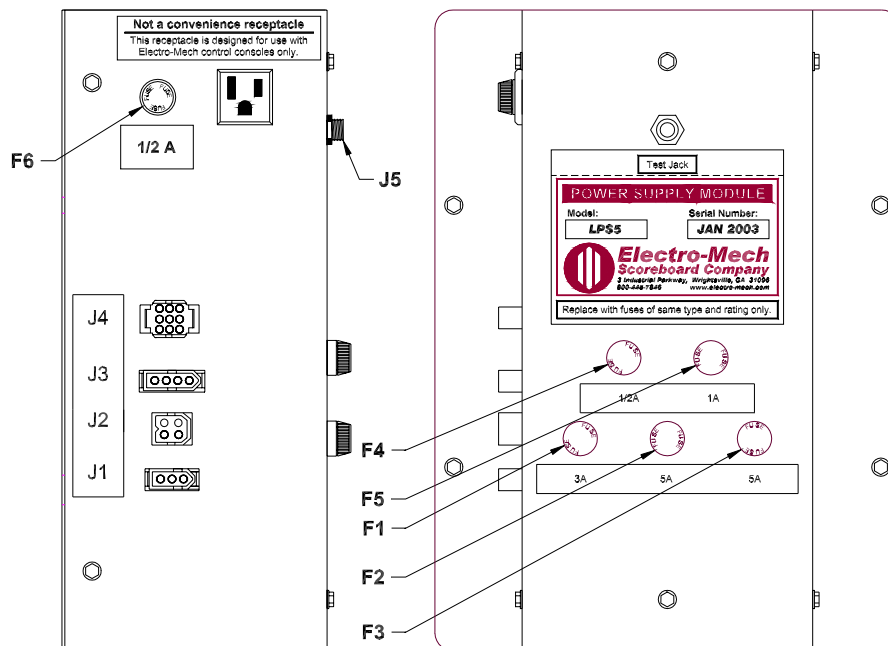


Figure 17 LPS5 Fuse Locations

LPS5 FUSES

FUSE	RATING	FUNCTION	BUSSMAN PART #
F1	3A 250V	TRANSFORMER PRIMARY	AGC-3
F2	5A 250V	DRIVER MODULE DC POWER INPUT #1	AGC-5
F3	5A 250V	DRIVER MODULE DC POWER INPUT #2	AGC-5
F4	½A 250V	SERIAL DATA ISOLATION RELAY	AGC-1/2
F5	1A 250V	HORN	AGC-1
F6	½A 250V	120 VAC ELECTRICAL RECEPTACLE	AGC-1/2

Note: Other manufacturer's fuses may be substituted for the Bussmann fuses.

LED Power Supply Module Replacement

Electrical connections to the LED POWER SUPPLY MODULE LPS5 are made with four keyed plugs that mate with jacks on the left side of the module. The module is secured inside the scoreboard with four machine screws.

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.

Surge Suppressor Replacement

Electrical connections to the Surge Suppressor are made with ¼” quick disconnects that mate with ¼” tabs on the top of the module. The module is secured inside the scoreboard with one machine screw.

1. Unplug the electrical connections from the module.
2. Remove the screw.
3. Remove the module from the scoreboard.
4. Insert the replacement module in the scoreboard.
5. Secure the module with the screw.
6. Plug the ¼” quick disconnects on the ¼” tabs on the top of the module. The black wires should be connected to the ¼” tabs on the module labeled L. The white wires should be connected to the ¼” tabs on the module labeled N. The green wire should be connected to the ¼” tab on the module labeled G. Figure 18 shows the top view of the Surge Suppressor.

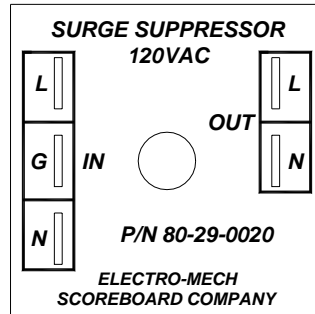


Figure 18 Surge Suppressor Terminals

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 LAMPS, FUSES AND SOCKETS.

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, NEGLIGENCE, ABUSE, MISUSE OR OTHER NATURAL DISASTERS, INCLUDING BUT NOT LIMITED TO FIRE, WIND, LIGHTNING, OR FLOOD, IS NOT COVERED BY THIS GUARANTEE.