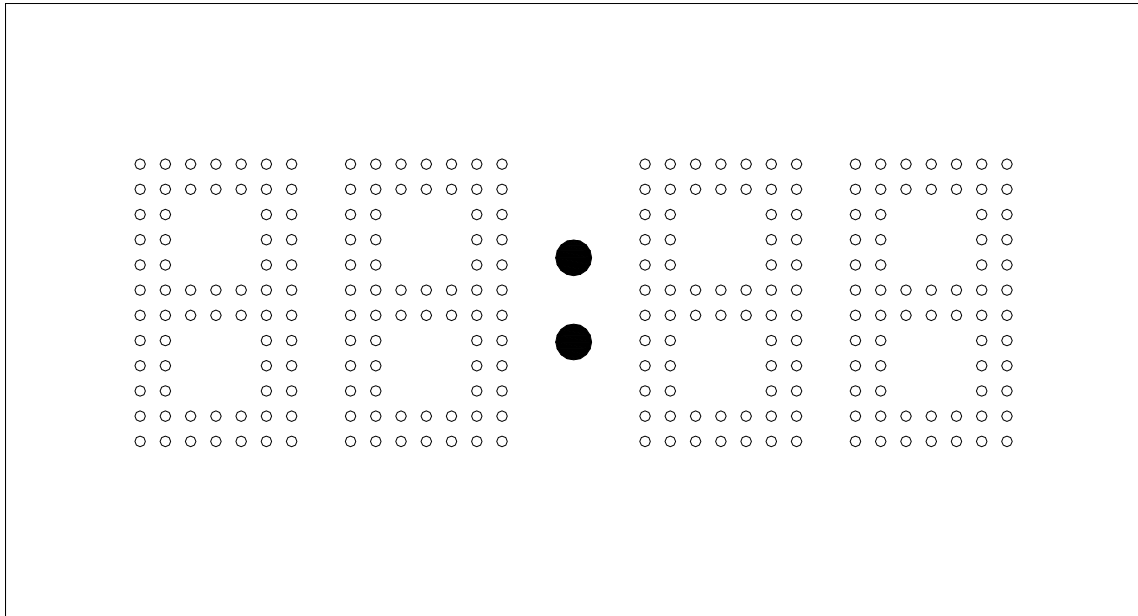# ELECTRO-MECH SCOREBOARD CO.

MODEL 2106 LOCKER ROOM CLOCK

OWNER'S HANDBOOK

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

Rev. 1 Revised: 10/05/2006

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MODEL 2106 LOCKER ROOM CLOCK SPECIFICATIONS

GENERAL: This ETL listed product includes the locker room clock, 10 ft. extension cable, and junction box. It may be purchased with or without a control console.

DIMENSIONS: 27.25" L x 17.75" H x 6"

WEIGHT: 20 lbs

CONSTRUCTION: The outer frame is made from extruded aluminum. The face and back are made from aluminum sheet. The face is finished with enamel paint. Black is the standard face color.

DISPLAY: The model 2106 locker room clock is a 99:59 clock. If it is connected to the control console that operates a compatible basketball scoreboard, the locker room clock will display the same time as the basketball scoreboard.

DIGITS AND SYMBOLS: Light emitting diodes mounted on printed circuit boards form the 6" red digits. The colon is made of vinyl.

POWER REQUIREMENTS: Locker Room Clock - 120 VAC, 0.2 A, 60 Hz. The locker room clock 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 control console features a microprocessor, 37 key sealed membrane keypad, a LCD display, and an attached 6 foot power cord. 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 ¼" in diameter. One length is required to run from each unit to the point of operation. This item is sold separately from the locker room clock.

JUNCTION BOX AND EXTENSION CABLE: A 4 ¼" x 2 ¼" x 2" junction box with a ¼" stereo jack mounted on the face plate is attached to each control cable at the point of operation. A 10 ft. extension cable connects the control console to each junction box.

WARRANTY: Five year limited warranty.

LOCKER ROOM CLOCK INSTALLATION

This part of the manual describes the mechanical and electrical installation of the locker room clock.

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

- Control cable (length dependent upon installation site layout)
- ScoreLink 200 RF Modem System (a transmitter and two receivers)

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

- Hardware to attach the locker room clock to the wall.
- Grounded NEMA 5-15R 120 VAC receptacles for the 2106 and control console at the scorekeeper's table.

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 consists of mounting the locker room clock on the wall. There are mounting flanges at the top and bottom of the cabinet. Drill holes through the flanges at the mounting points and fasten the locker room clock to the wall using appropriate fasteners. The location of the mounting points is dependent upon the construction of the wall on which the locker room will be installed.

ELECTRICAL INSTALLATION

We recommend a qualified electrician perform the needed electrical connections to ensure proper operation of the locker room clock. These connections include connecting the locker room clock to a power source, installing the ScoreLink 200 or the control cable, and connecting the control console.

Power Connection

The locker room clock requires 120 VAC service at the locker room clock to operate properly. **Maximum power consumption of Model 2106: 40 Watts.** The locker room clock has a 6 ft. attached power cord located at the top of the cabinet. Plug the power cord into a grounded NEMA 5-15R receptacle. The receptacle should be controlled by a separate circuit breaker so that the locker room clock can be turned off without turning off other electrical devices in the facility. Figure 1 shows the electrical connection points on the locker room clock.
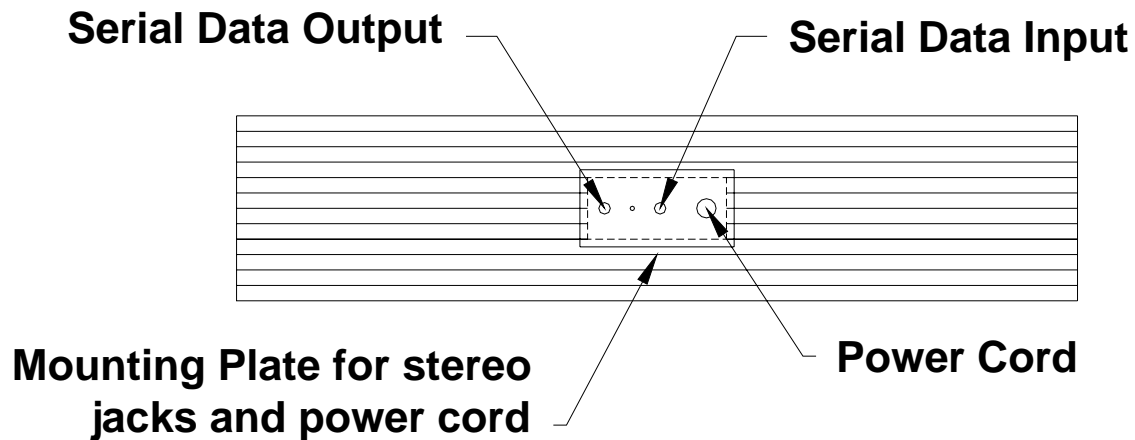
Top of 2106 Cabinet

Serial Data Output — — **Serial Data Input**

Mounting Plate for stereo jacks and power cord — **Power Cord**

Figure 1 Electrical Connection Points

Control Cable Installation

The control cable connects the locker room clock to the control console. A small junction box with a ¼" stereo jack mounted on the face plate is attached to the control cable at the point of operation of the locker room clock. This 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 attached. Some customers prefer to attach the junction box after the cable is installed. Those customers must solder the control cable to the ¼" stereo jack. Figure 2 shows the control cable wire connection points on the rear of the ¼" stereo jack.
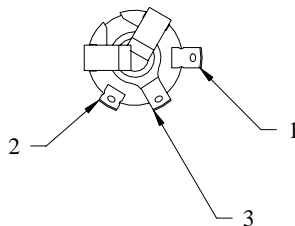
PIN 1 - BLACK WIRE
PIN 2 - RED WIRE
PIN 3 - SHIELD WIRE

Figure 2 ¼" Stereo Jack Wiring Diagram

A ¼" stereo plug is attached to the locker room clock end of the control cable. It is inserted into the serial data input jack mounted on top of the locker room clock. Most customers order the control cable with the ¼" stereo plug attached. Some customers prefer to attach it after the cable is installed. Those customers must solder the ¼" stereo plug to the cable according to the figure 3. Unscrew the stereo plug cover from the plug body to expose the contact pins.
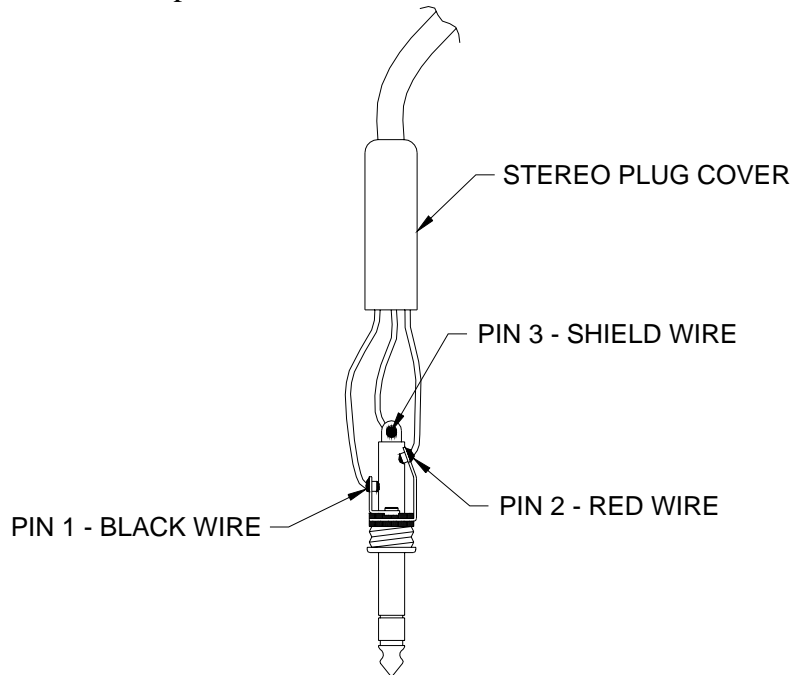
STEREO PLUG COVER

PIN 3 - SHIELD WIRE

PIN 2 - RED WIRE

PIN 1 - BLACK WIRE

Figure 3 ¼" Stereo Plug Wiring Diagram

If the customer is operating a scoreboard with the same control console as the locker room clock, he can install the control cable from the ¼" stereo jack mounted on the top of the locker room clock to either the shot timer jack located on the right side of the scoreboard (serial data output jack located on the top of models 2350-4, 2650-4, and 2655-4) or to the control console. When connecting between the shot timer jack of the scoreboard to the model 2106 locker room clock, each end of the control cable has a ¼" stereo plug attached.

Additional scoreboards and shot timers can be controlled by connecting a control cable from the serial data output ¼" stereo jack on the locker room clock to the serial data input ¼" stereo jack on the top of the additional scoreboard or shot timers. Attach ¼" stereo plugs on each end of these cables according to figure 3.

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 or ScoreLink 200 Transmitter. The following steps describe how to connect the control console:

1. Plug one end of the extension cable into the ¼" stereo jack on the junction box or the ScoreLink 200 Transmitter, if purchased.
2. Plug the other end into one of the four ¼" 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.

LOCKER ROOM CLOCK OPERATION

LOCKER ROOM CLOCK STARTUP

1. Place the circuit breaker for the locker room clock in the **ON** position.
2. Plug one end of the extension cable into the ¼"stereo jack on the junction box or the ScoreLink 200 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 200 RF MODEM SYSTEM is installed with this locker room clock, 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 locker room clock is operated with a 37-key control console. Figure 4 shows the keypad layout on the control console.

ELECTRO-MECH SCOREBOARD CO.
120 Industrial Parkway   Wrightsville, GA 31096
800-445-7846   www.electro-mech.com

BASKETBALL / WRESTLING / VOLLEYBALL

SET CLOCK	SET CLOCK .1 SEC	.1 SEC ON / OFF	CLOCK UP / DOWN		7	8	9
SET SHOT TIMER	AUTO HORN	TIME OF DAY	TIME OUT TIMER		4	5	6
SET GUEST SCORE	SET HOME SCORE	PLAYER MATCH GAME	PLAYER FOUL		1	2	3
(TEAM (MATCH (GAMES	FOULS) POINTS) WON)	GUEST BONUS	HOME BONUS		CLEAR	0	ENTER

SET GUEST TIME OUTS

NEW GAME

SET HOME TIME OUTS

PERIOD

GUEST   HOME

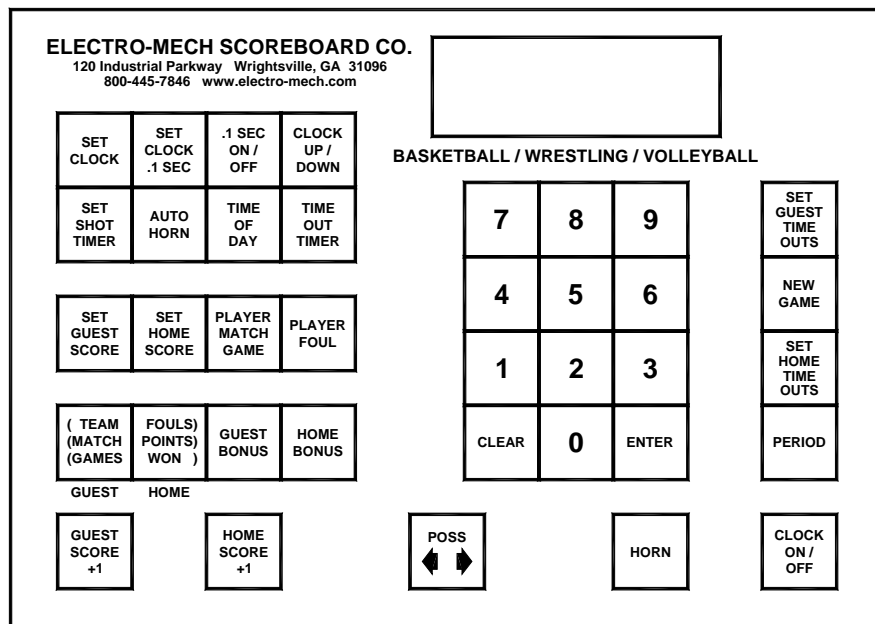| GUEST SCORE +1	HOME SCORE +1	POSS ◀ ▶	HORN	CLOCK ON / OFF

Figure 4 Keypad Layout

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

```
ELECTRO-MECH 2.6
SCOREBOARD MPBWV
```

After a few seconds the display will read:

```
000 D15:00 0 000
   00   00 0   00
```

The locker room clock will display 15:00.

Control Console Key Functions

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

```
000 D15:00 0 000
SET CLK <00:00>
```

Press 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 to set the scoreboard 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:

```
000 D15:00 0 000
SET SEC <00.0>
```

Press 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 display of tenths of seconds on the scoreboard. The use of this key has a visible effect on the scoreboard only if the game clock is 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 $1/10^{th}$ 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 is set 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 [1], [ENTER] on the control console. The letter D in front of the game time on the console LCD will be replaced with the letter U to indicate that the clock is in the count up mode. To reset the clock to count down mode, press [CLOCK UP / DOWN], [0], [ENTER] on the control console.

5. **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, [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 function is active. The scoreboard will display the time of day.

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

7. **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.

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

The other keys are not used with the model 2106 locker room clock, but may be used for a compatible basketball scoreboard.

LOCKER ROOM CLOCK SHUTDOWN

1. Place the power disconnect for the locker room clock in the **OFF** position.
2. Unplug the control console power cord.
3. Unplug the extension cable.
4. If a ScoreLink 200 RF MODEM SYSTEM is installed with this locker room clock, unplug the Transmitter's wall mount power supply.
5. Store the control console and ScoreLink 200 Transmitter is a dry location. These units are not waterproof.

Proper locker room clock shutdown will help protect the locker room clock and control console from power surges and lightning strikes.

SERVICING THE LOCKER ROOM CLOCK

While your locker room clock 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 locker room clock model number when calling. Locker room clock 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.

COMPONENT REPLACEMENT

LED Digits And Indicators Replacement

The LEDs that form digits are soldered on circuit boards mounted behind the locker room clock face. 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 locker room clock when removing or replacing LED digits**. Figure 5 shows the components of a LED digit assembly.
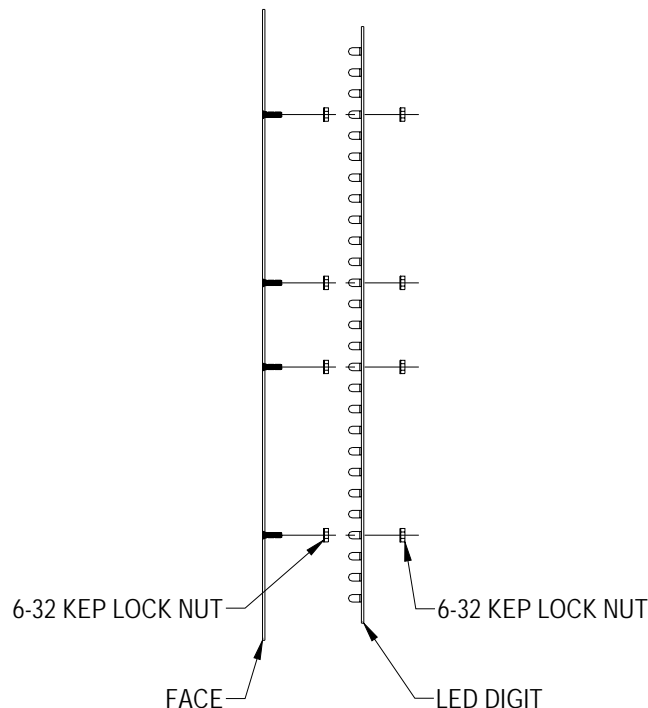

6-32 KEP LOCK NUT —   — 6-32 KEP LOCK NUT

FACE —   — LED DIGIT

Figure 5 LED Digit Assembly

1. Remove the machine screws that fasten the face of the locker room clock.

2. The wires and cables that connect from the locker room clock cabinet to the rear side of the face are fastened with a releasable tie wrap. Squeeze the end of tie wrap to release it.
3. Disconnect the wires and cable from the jacks on the LX11 driver board.
4. Place the face assembly on a flat surface and remove the 6-32 kep lock nuts that hold the circuit board in place.
5. Remove the circuit board.
6. Align the mounting holes in the circuit board with the threaded studs on the mask and install the replacement digit on the mask.
7. Plug the ribbon cable onto the header on the back of the circuit board. Refer to figure 6 in order to plug the ribbon cable IDC connector onto the circuit board in the proper orientation.
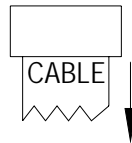
LED DIGIT HEADER   RIBBON CABLE
                                    IDC SOCKET
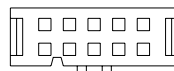
CABLE

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.

Figure 6 LED Digit Ribbon Cable Connection Diagram

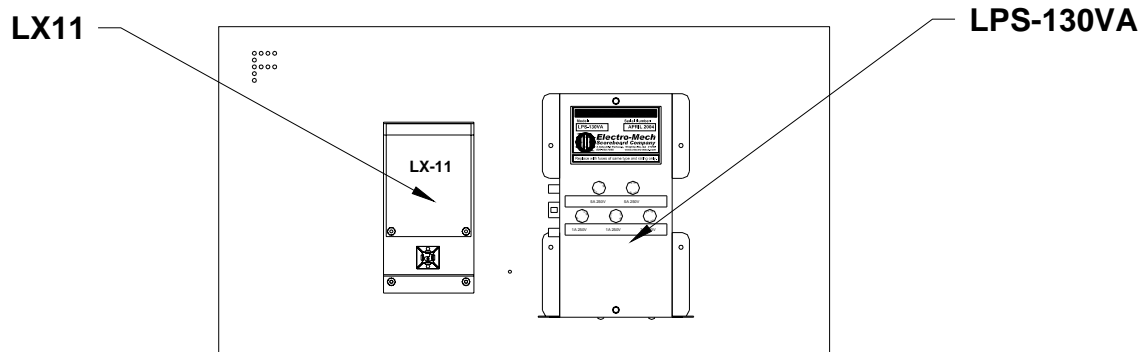Figure 7 shows the view inside the locker room clock.

LX11   **LPS-130VA**

Figure 7 Locker Room Clock Internal Components

LX11 DRIVER MODULE FUNCTIONS

DRIVER MODULE JACK	FUNCTION
J2	SERIAL DATA INPUT
J3	SERIAL DATA OUTPUT
J6	CLOCK SECONDS UNITS DIGIT
J7	DRIVER MODULE DC POWER INPUT
J8	CLOCK MINUTES UNITS DIGIT
J9	CLOCK SECONDS TENS DIGIT
J10	CLOCK MINUTES TENS DIGIT

LX Driver Board Replacement

Electrical connections to the LX driver board are made with ribbon cable polarized IDC sockets and locking ramp crimp terminal housings that mate with jacks on the circuit board. The circuit board is secured inside the locker room clock on a metal bracket with two hex nuts.

1. Unplug the electrical connections from the circuit board.
2. Remove the two hex nuts.
3. Remove the circuit board from the scoreboard.
4. Insert the replacement circuit board on the metal bracket in the scoreboard.
5. Secure the circuit board with the two hex nuts.
6. Insert the plugs into the jacks on the circuit board.

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

LPS-130VA LED POWER SUPPLY MODULE FUNCTIONS

JACK	FUNCTION
J1	NOT USED
J2	16 VDC OUTPUT TO LX11
J3	120 VAC INPUT

Figure 8 shows the location of the fuses in the LPS-130VA LED Power Supply Module. The table following the figure lists the fuse ratings, functions, and part numbers.
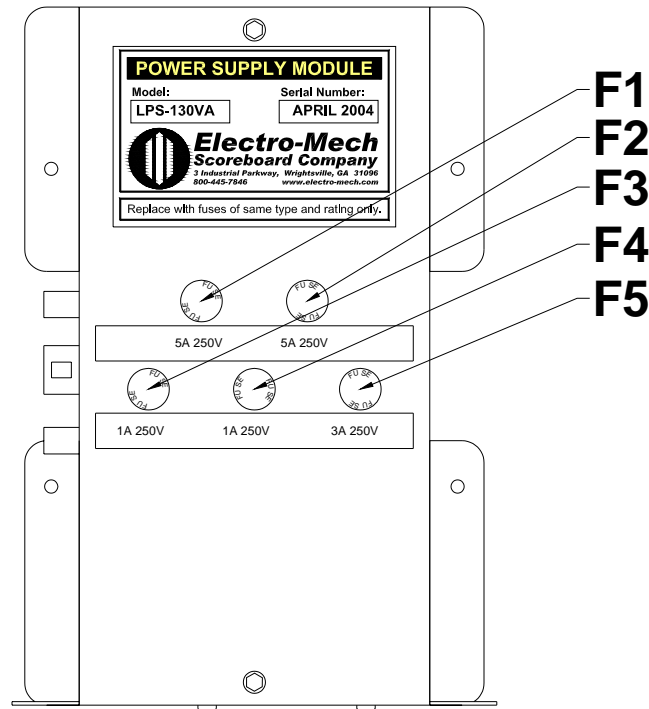

Figure 8 LPS-130VA Fuse Locations

LPS-130VA FUSES

FUSE	RATING	FUNCTION	BUSSMAN PART #
F1	5A 250V	LX11 DC POWER INPUT	AGC-5
F2	5A 250V	NOT USED	AGC-5
F3	1A 250V	NOT USED	AGC-1
F4	1A 250V	NOT USED	AGC-1
F5	3A 250V	TRANSFORMER PRIMARY	AGC-3

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

LED Power Supply Module Replacement

Electrical connections to the LPS-130VA LED POWER SUPPLY MODULE are made with keyed plugs that mate with jacks on the left side of the module. The module is secured inside the locker room clock with two machine screws.

1. Disconnect the plugs from the jacks on the module.
2. Remove the two machine screws.
3. Remove the module from the locker room clock.
4. Insert the replacement module in the locker room clock.
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 locker room clock when removing or replacing it.

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.