

SECTION 116843

MODEL 3540 OUTDOOR SCOREBOARD

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single-face electronic scoreboard and control console for outdoor use.

1.02 REFERENCES

- A. Standard for Electric Signs, UL-48, 14th Edition.
- B. Standard for Control Centers for Changing Message Type Signs, UL-1433, 4th Edition.
- C. Federal Communications Commission Regulation Part 15.
- D. National Electric Code.

1.03 SUBMITTALS

- A. Scoreboard owner's handbook provides drawings and other information needed for installation, operation, and maintenance of the scoreboard and accessories.

1.04 QUALITY ASSURANCE

- A. Source limitation: Obtain all components including scoreboard, control console, data cable, mounting hardware, and other accessories from a single manufacturer.
- B. Manufacturer qualifications: Require company specializing in manufacturing electronic scoreboards with a minimum of ten years experience.
- C. Adherence to nationally recognized standards.
 - 1. ETL listed to UL Standards 48 and 1433.
 - 2. NEC compliant.
 - 3. FCC compliant.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Product delivered to installation site unless otherwise specified.
- B. Scoreboard and accessories to be stored in a clean, dry environment.
- C. Special precautions for the scoreboard face.
 - 1. Each scoreboard section will be protected during shipment by a layer of cardboard or other sheet material. Avoid removing this protective sheet until the installation begins.
 - 2. Never lay a scoreboard face down or stack other objects on a scoreboard lying on its back.
 - 3. Avoid sliding objects (like another scoreboard) along the plane of the scoreboard face even if the protective sheet is in place. This can result in LEDs being sheared.

1.06 PROJECT CONDITIONS

- A. Scoreboard and accessories should not be installed until the mounting posts are secure and the concrete footings have set.
- B. The customer determines location of scoreboard, control console, and other accessories.
- C. The customer is responsible for verifying that the mounting structure is capable of supporting the weight and wind load of the scoreboard, additional ID panels, and other accessories.
- D. The customer is responsible for making certain the installation meets any requirements set forth in local codes, which may include limitations on the height of the structure, specifications of footings, standards for wind loads, approvals by a locally licensed professional engineer, etc.
- E. Installation of outdoor scoreboards and accessories is dependent upon suitable weather conditions.

1.07 WARRANTY

- A. Five year limited warranty includes factory labor and material costs for repairing or replacing defective parts. Refer to the warranty document included in the scoreboard owner's handbook for specific information.
- B. Warranty coverage based on the date of manufacture.

1.08 MAINTENANCE

- A. Replacement parts and factory repair options available from manufacturer.
- B. Product support provided by experienced technicians and online documentation available via phone, web, and email at no cost to customer.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Electro-Mech Scoreboard Co., 120 Industrial Parkway, Wrightsville, GA 31096.
 - 1. Phone 800-445-7846.
 - 2. Fax 478-864-0212.
 - 3. Email score@electro-mech.com
 - 4. Click www.electro-mech.com

2.02 SCOREBOARD

- A. General.
 - 1. Functions and Features: Model 3540 Outdoor Scoreboard is designed to present information pertinent to football. Presentation includes:
 - a. Four-digit Clock that can count up in MM:SS format, count down in MM:SS or SS.T format, or show time of day in HH:MM format. Clock digits are 30 inches tall.

- b. Guest and Home Scores capable of scoring up to 99. Score digits are 24 inches tall.
 - c. Guest and Home Possession Indicators shaped like a football.
 - d. Guest and Home Time Outs Left to 3. Time Outs digits are 18 inches tall.
 - e. Down to 4. Digit is 24 inches tall.
 - f. To Go to 99. Digits are 24 inches tall.
 - g. Ball On to 99. Digits are 24 inches tall.
 - h. Quarter to 4. Digit is 24 inches tall.
2. Cabinet Size
- a. The main scoreboard ships as two cabinets, the bottom section three feet tall and the top section five feet tall. ID panels ship as separate cabinets.
 - b. Assembled scoreboard (with no ID panels): 32 feet (9758 mm) wide, 8 feet (2416 mm) tall, 6 inches (152 mm) deep.
 - c. Top ID panel (provided in a common alternative configuration): 32 feet (9758 mm) wide, 33 inches (843 mm) tall, 6 inches (152 mm) deep.
3. Cabinet Weight
- a. Assembled scoreboard (with no ID panels): 770 pounds (350 kg).
 - b. Top ID panel (provided in a common alternate configuration): 290 pounds (132 kg).
4. Electrical Requirements
- a. Scoreboard requires 120 VAC, 4 amp service.
 - b. Electro-Mech recommends mounting a disconnect switch and convenience receptacle in line with incoming AC power on one of the support posts beneath the scoreboard.

2.03 ACCESSORIES

A. Standard accessories.

- 1. Control Console.
 - a. Supports all features of Electro-Mech 32x0 and 35x0 series of football scoreboards (including Models 3230, 3250, 3260, 3270, 3530, 3540, and 3580) without the need to enter codes or other information to configure the device.
 - b. Constructed of a heavy-duty ABS plastic housing holding a 0.1-inch thick keypad panel with stainless steel metal dome switches that provide tactile feedback and are rated for one million actuations.
 - c. Requires one standard grounded 120 VAC electrical outlet.
- 2. Extension Cables: 10-foot long shielded data cable with male stereo connectors at each end allows control console to be connected to a junction box (or ScoreLink transmitter) at the point of operation and later unplugged for storage.
- 3. Junction Box: Provides a point of termination for the data cable with a stereo socket for quick connection to the control console (for systems with hardwired data cable).
- 4. Mounting hardware: Standard mounting hardware allows the scoreboard cabinet to be clamped at any height along the support posts without the need for drilling holes or fabricating brackets onsite. Standard hardware accommodates round pipes, I-beams, or other post styles with an exterior cross-section no greater than seven inches. Optional hardware may be substituted where local codes require larger posts.

5. Interconnect Cabling: Data and power are transmitted from the lower scoreboard cabinet to the upper scoreboard cabinets via a set of provided cables.
 6. Horn: Electronic horn sounds automatically at the end of a period (when the Game Clock counts down to 0:00) or manually via a button on the control console.
- B. Optional accessories.
1. Data Cable: A shielded two-conductor cable with a drain line is the typical means of providing a path for data from the control console to the scoreboard.
 2. ScoreLink Wireless RF Modem System: This RF communications system may be substituted for the data cable at the time of installation or as a replacement for the cable at any time after the installation. ScoreLink requires a standard electrical outlet for the transmitter at the point of operation.
 3. ID Panels.
 - a. This scoreboard may be ordered with side ID panels that ship as separate cabinets and bolt to the main scoreboard cabinets on either side. A side ID panel requires an additional mounting post.
 - b. Top and bottom ID panels are typically mounted on the same posts as the main scoreboard above and below it.
 - c. ID panels may be purchased blank or with simple text, multi-colored text and graphics, or screen-printed processed-color logos applied to their faces.
 4. Carrying Case For Control Console: Included with the ScoreLink system, this option is also available for scoreboards with hard-wired data cables.
 5. Handheld Clock Start/Stop Control: Provides a hand-held pendant that allows the clock operator to start and stop the Game Clock without touching the control console.
 6. Delay Of Game Time Displays: A pair of these displays may be mounted on opposite sides of the football field and operated through the same control console handling the main scoreboard. See our product literature or specifications for Model 3050 for details.
 7. Team Name In Place of "HOME".

2.04 FINISH

- A. Standard scoreboard faces and digit masks are coated with low gloss black polyester resin paint for maximum contrast and resistance to scratches.
 1. Baked on automotive grade low gloss paint in a selection of standard colors is available from the manufacturer for the scoreboard face.
 2. Non-standard colors and finishes may be applied to the scoreboard face at the customer's request.
- B. Scoreboard framing and back are mill-finished aluminum.
- C. Captions and other decorative elements on the face of the scoreboard are vinyl.

2.05 SOURCE QUALITY CONTROL

- A. Tests and inspection.
 1. Manufacturer requires sub-contracted printed circuit board subassemblies to undergo functional testing at the point of manufacture.

2. Manufacturer inspects incoming components prior to installation in scoreboard and accessories.
3. Manufacturer functionally tests major electrical subcomponents prior to installation in scoreboard and accessories.
4. Manufacturer inspects and tests scoreboards and accessories at full power prior to shipment.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that the mounting posts are correctly sized and positioned to match the mounting points on the scoreboard and any optional panels and that their concrete footings have properly cured.
- B. Verify the scoreboard is grounded to one or more 5/8-inch by 8-foot copper clad ground rods driven into the soil near the scoreboard.
- C. Verify 120 VAC power supplying the scoreboard is properly grounded.
- D. Verify 120 VAC outlet at control console location is properly grounded.
- E. If data cable is used, verify continuity from scoreboard to control console location.
- F. Verify data and AC power cables are not run in the same conduit or within six inches of each other in the same trench.
- G. Verify data cable and AC power cable are secure and run in conduits where they might be exposed to abuse or where local, state, or national codes require.
- H. Verify location of scoreboard, junction box, and accessories with customer.

3.02 INSTALLATION

- A. Refer to scoreboard owner's handbook for installation instructions.

3.03 PROTECTION

- A. The most common sources of damage to scoreboards and accessories are electrical surges running through power or data connections. The usual causes are lightning, power equipment problems (floating neutrals, bad transformers, etc.), and improper connections. To minimize these problems:
 1. Ensure electrical wiring is properly grounded.
 2. Ensure the scoreboard is correctly grounded to one or more 5/8-inch by 8-foot copper clad ground rods driven into the soil near the scoreboard.
 3. Unplug control console from power outlet and from data cable when not in use.
 4. Turn off the breaker to disconnect scoreboard from power when not in use.
 5. Label scoreboard data cable junction box and all connectors near junction box, scoreboard, and accessories so that public address systems and other devices with similar connections are not accidentally plugged into the scoreboard.
- B. Avoid loss or damage of control console, extension cable, and other accessories by storing when not in use.

END OF SECTION