

FAIR-PLAY



A0262

INDOOR

SCOREBOARD & LED DISPLAY INSTALLATION RECOMMENDATIONS

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The installation of a Fair-Play scoreboard, LED displays and/or signs is the responsibility of others. Fair-Play assumes no responsibility for the design or construction of the installation. Fair-Play highly recommends that a professional engineer, appropriately licensed in the area, review and approve the installation. All field testing, construction, welding, and electrical work should be performed by appropriately trained and licensed personnel.

WARNING: *Incorrect installation may permanently damage the scoreboard and void the warranty. Fair-Play assumes no responsibilities for installations done by others.*

These installation recommendations are subject to change without notice.

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EQUIPMENT LOCATION & PLACEMENT

- The sports display (scoreboard, LED display and optional sign) must be positioned so that the spectators see what is being displayed.
- The control must be located such that the scorekeeper or control operator can monitor the event and see what is being displayed. See Figure 1 below.

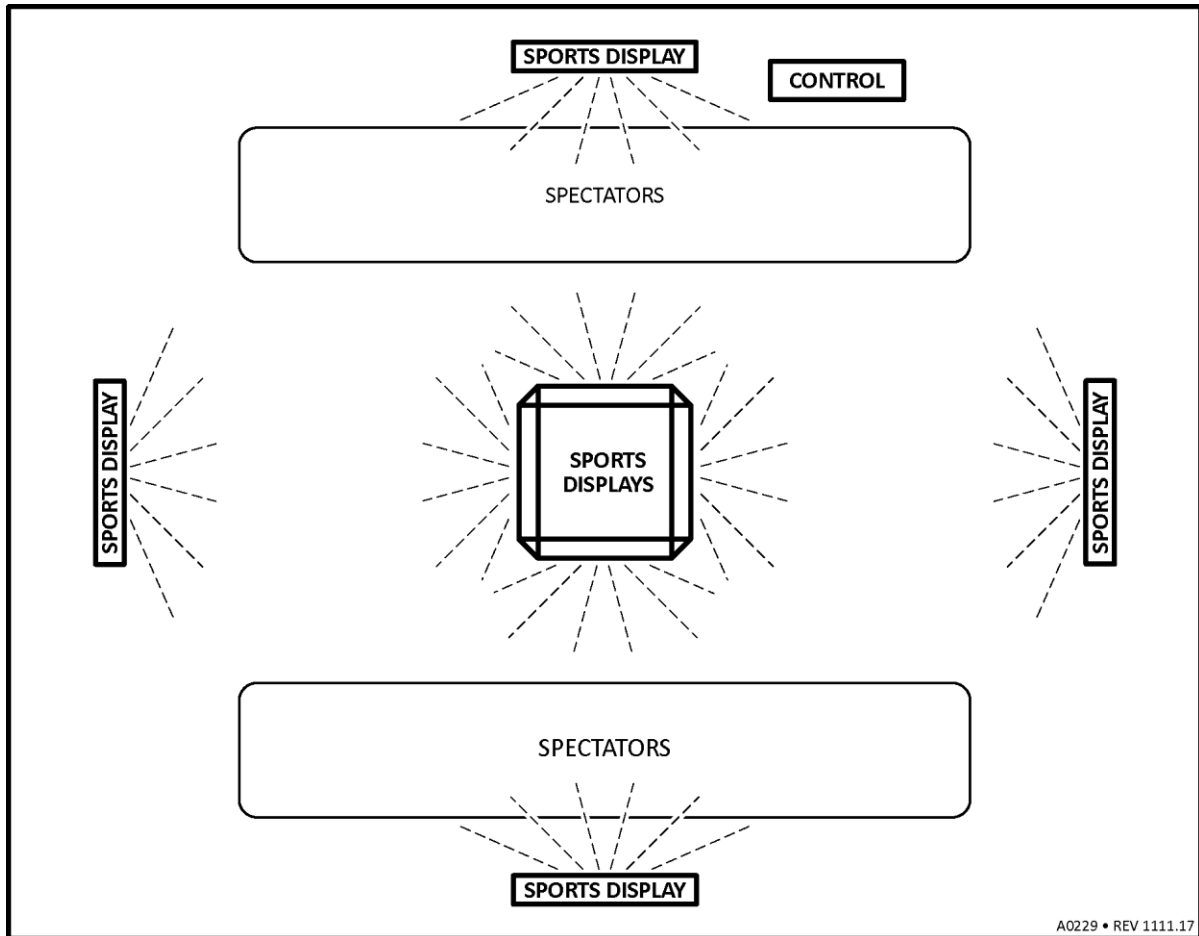


FIGURE 1 – LED DISPLAY AND CONTROL PLACEMENT

VENTILATION

- Install the scoreboard so that air flow is not restricted. Customer's structure must allow for the free flow of outside ambient air to the product, without recirculation of air from outlet vent to inlet vent.
- Warranty will be void if components fail due to air flow restrictions.

UNPACKING

For convenience and to prevent possible damage to equipment, unpack the shipping containers at the installation site.

CAUTION: *The shipping crates and boxes must be unpacked on a sturdy and level floor. Take all precautions to prevent equipment from tipping and cause possible injury to personnel or damage to equipment.*

SCOREBOARD & CONTROL

1. Remove one side of the shipping crate. See Figure 2.
2. **DO NOT** use box cutters to cut into the shipping crate cover. Doing so may damage the scoreboard contained in the shipping box.
3. The scoreboard may be top-heavy.

SAFETY PRECAUTION:

To prevent possible equipment damage and/or personal injury, hook cables or chains to the eyebolts or j-brackets located near the top of the scoreboard to prevent it from tipping.

4. The control package is shipped inside the scoreboard behind a digit panel marked with removable labels. Loosen the 4 screws to remove the digit panel and remove the control package.
5. Reinstall the digit panel.
6. Carefully slide the scoreboard from the shipping crate.

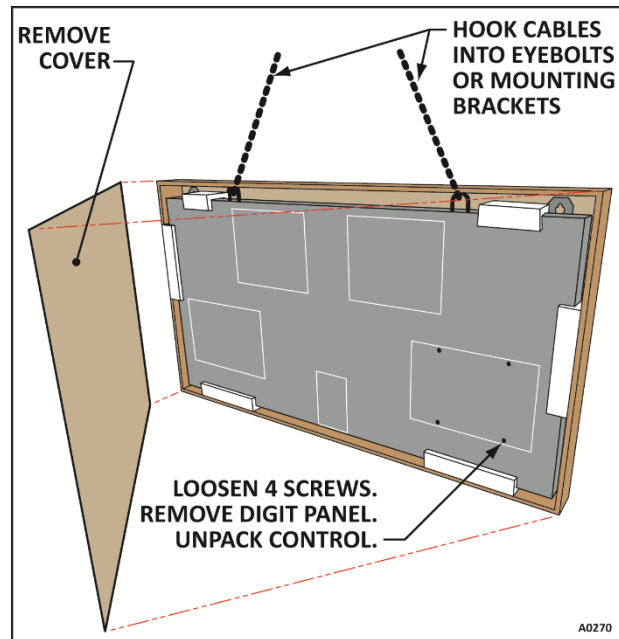


FIGURE 2 – UNPACKING THE INDOOR SCOREBOARD

SIGNS

1. **DO NOT** use box cutters to cut into the shipping box as this may damage the sign contained in the box.
2. Remove the side boards of one side of the shipping crate. See Figure 3.
3. Remove the boxed sign from the shipping crate.
4. Carefully slide the sign from inside the shipping box.

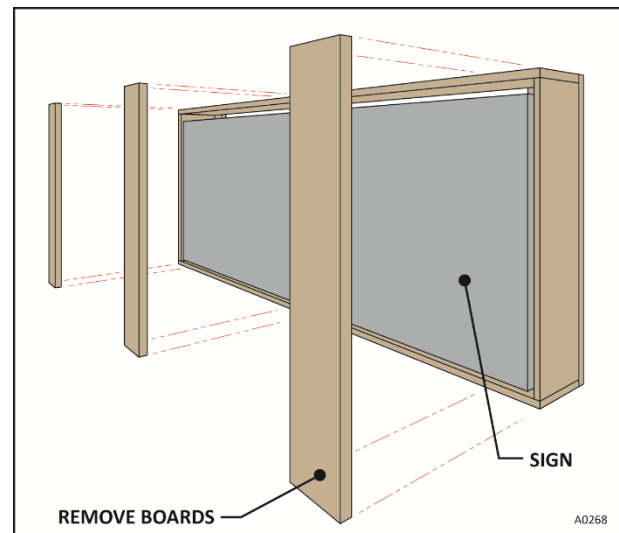


FIGURE 3 – UNPACKING THE SIGN

SCOREBOARD INSTALLATION

FOUR-SIDED SCOREBOARD ASSEMBLY

Four-Sided Scoreboards require assembly on ground level before it can be hoisted to its final location. See Figure 4 below.

1. **Arrange the scoreboards as shown.**

Secure scoreboards to corner angles using hardware supplied.

2. **Reconnect the power harnesses** – side 1 to 4, side 1 to 2, and side 2 to 3.

Route the power harness coiled inside the scoreboard through the topmost grommet hole located on each side of the scoreboard. See Figure 4 below.

3. **Reconnect the data harness** – there are two methods used in connecting the data harness to the lamp drivers:

- **Standard Data Chain** – most common method. See information on page 4 then continue with step 4 below.
- **Data Splitter Option** – see information above then continue with step 4 below.

4. Attach the corner panels using supplied hardware.

5. **Test connections before lifting entire assembly into position.**

Test that all harness connections are working by connecting the data cable from the control and supplying temporary power to **SCOREBOARD SIDE 1**. Refer to **Scoreboard Power & Data** on page 10.

6. Proceed to **Mounting the Scoreboard** on page 7.

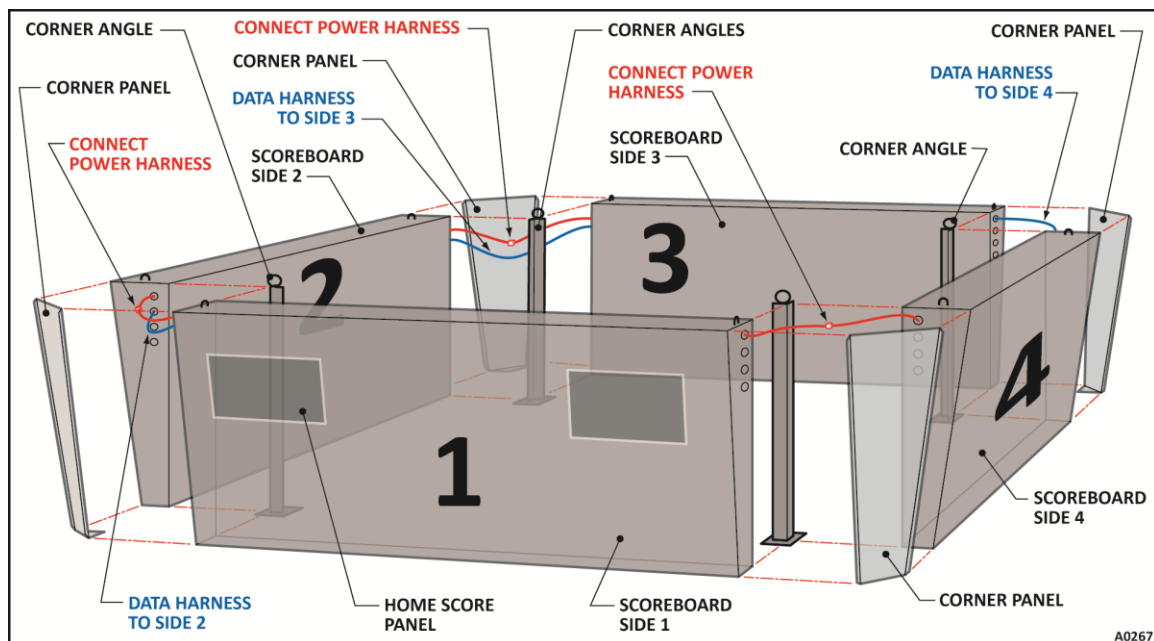


FIGURE 4 – ASSEMBLY OF FOUR-SIDED SCOREBOARD

STANDARD DATA CHAIN

1. The data chain harness is the standard connection method used for a four-sided scoreboard. Data from **SIDE 1** is fed to **SIDE 2**, from **SIDE 2** to **SIDE 3**, and finally from **SIDE 3** to **SIDE 4**.
 2. **Open the internal compartment** – use any of the following methods:
 - **HOME SCORE PANEL** – on each scoreboard, loosen the retaining screws, then move or flip the panel out of the way.
 - **REAR ACCESS COVER** – on the rear of each scoreboard, loosen the retaining screws, then move the cover out of the way.
- CAUTION:** *DO NOT unplug existing wire connections.*
3. Route and connect the data harness.
 - a. **Uncoil the data harness** – located in the upper left corner of the scoreboard.
 - b. **Route the data harness** – through the grommet holes along the sides of the scoreboards **SIDE 1** and **SIDE 2**.
 - c. **Connect the data harness** – into the **K28** data-in terminal of the **SIDE 2 LAMP DRIVER**. See Figure 6 below
 - d. Repeat the same procedure for connecting **SIDE 2** to **SIDE 3**, and **SIDE 3** to **SIDE 4**.
 4. **Close the internal compartment** – reinstall the **HOME SCORE PANELS** or **REAR ACCESS COVERS**.
 5. Continue with step 4 on page 3.

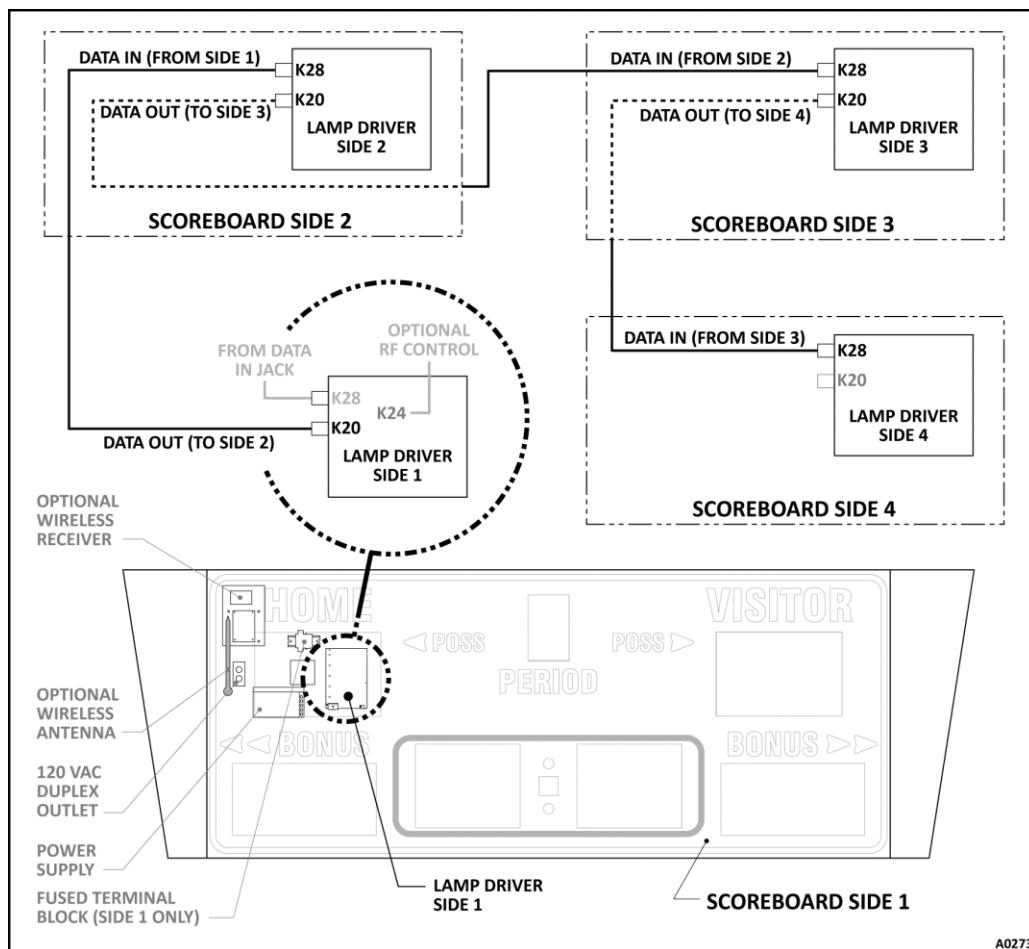


FIGURE 5 – FOUR-SIDED SCOREBOARD DATA CHAIN CONNECTIONS

DATA SPLITTER OPTION

A splitter is used on a four-sided scoreboard when additional lamp drivers required; stat panels for example. Data is distributed from the **DATA SPLITTER** to each scoreboard.

1. **Open the internal compartment** – use any of the following methods:

- **HOME SCORE PANEL** – loosen the retaining screws, then move or flip the panel out of the way.
- **REAR ACCESS COVER** – located on the back of each scoreboard, loosen the retaining screws, then move the cover out of the way.

CAUTION: *DO NOT unplug existing wire connections.*

2. Route and connect the data harness.

- Uncoil the data harness** – located in the upper left corner of **SCOREBOARDS SIDE 2, 3 and 4**.
- Route the data harness** – through the grommet holes along the sides of the scoreboards and to the **DATA SPLITTER** in **SCOREBOARD SIDE 1**.
- Connect data harness** – from **SIDES 2, 3 and 4** to **DATA SPLITTER** in **SIDE 1**. See Figure 6 below.

3. **Close internal compartment** – reinstall the home score digit panel or rear access cover.

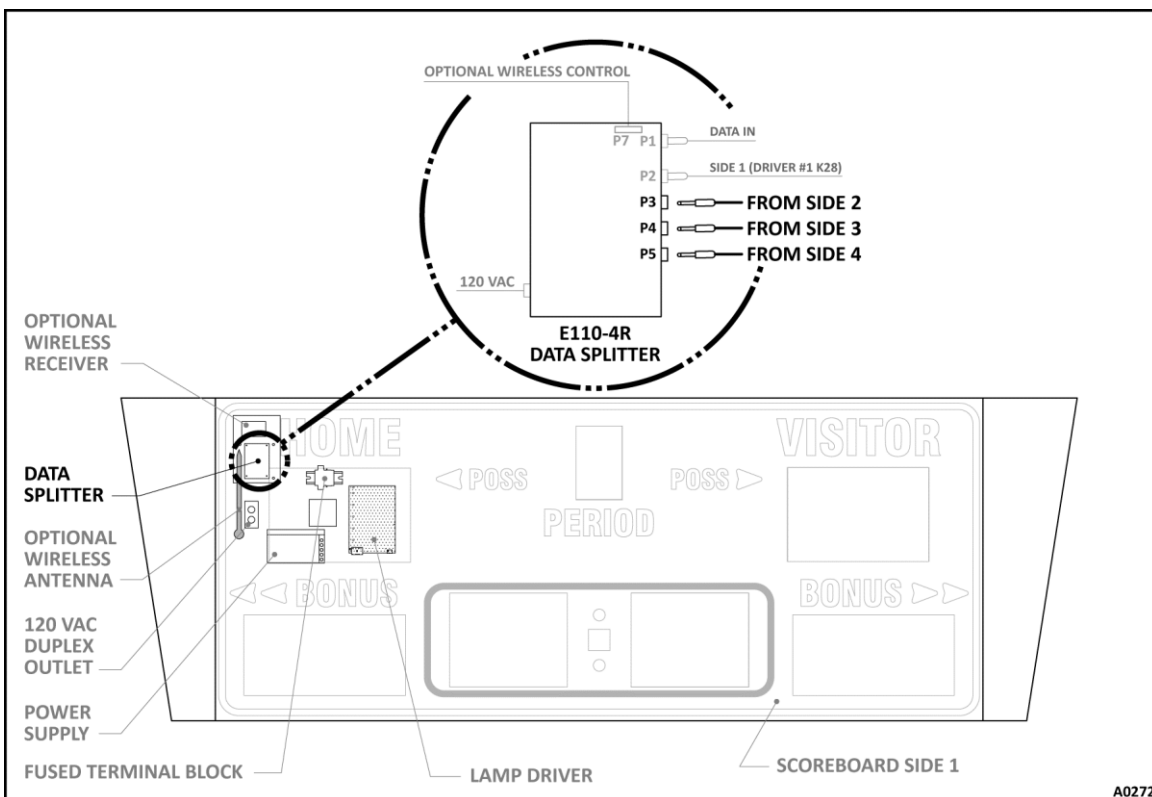


FIGURE 6 – FOUR-SIDED SCOREBOARD DATA SPLITTER CONNECTIONS

PORTABLE INDOOR SCOREBOARD

FLOOR OR TABLETOP

- Single-Sided or Two-Sided Tabletop models can be placed on the floor or on a table.
- Single-Sided or Two-Sided models equipped with wheels are for use on the floor.
- Three-sided models are mounted on a Floor Stand or placed on a table. Refer to Figure 7 below.

POWER AND DATA

Portable scoreboard models (single sided, two sided and three sided) are equipped with an attached power cord and provided with data cables with plug connectors. Refer to Figure 7 below.

1. **POWER** – connect the power cord to the 120 VAC grounded outlet.
2. **DATA** – connect the data cable from the control to the **DATA IN** jack of the scoreboard.

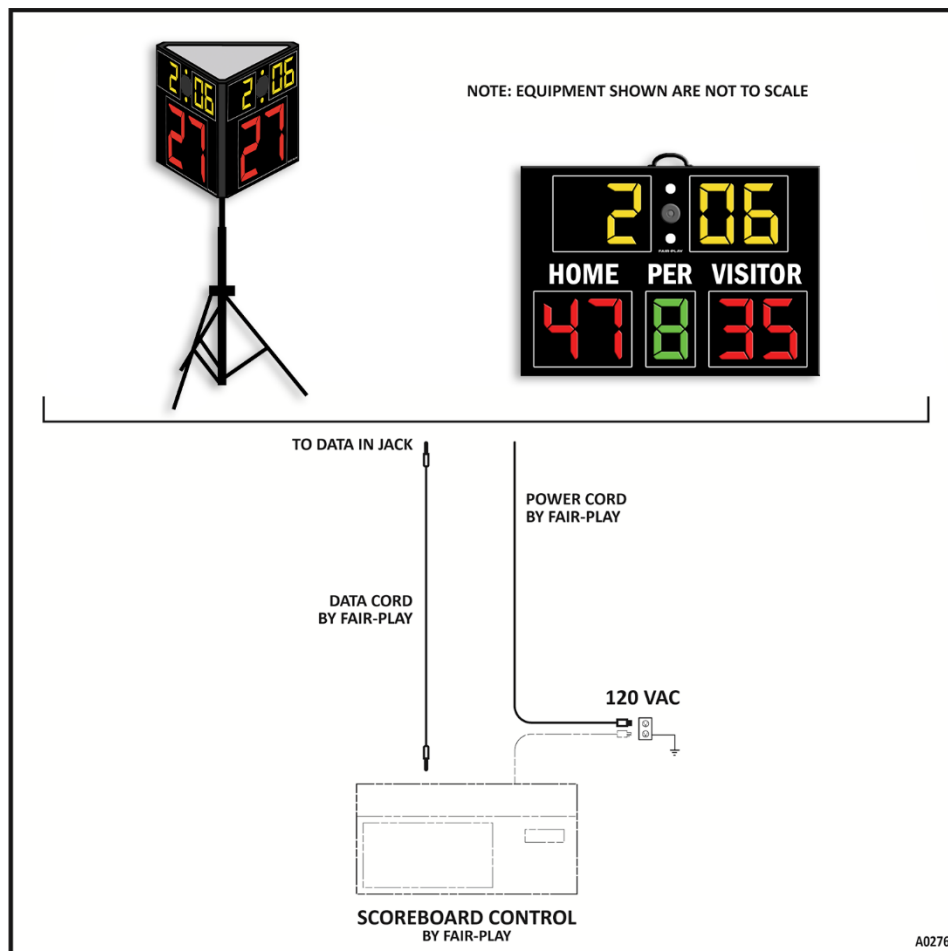


FIGURE 7 – POWER & DATA TO PORTABLE INDOOR SCOREBOARD

MOUNTING THE SCOREBOARD

RIGID SUPPORT STRUCTURE

- The scoreboard must be hung from or mounted to a rigid support structure in accordance to local codes. The scoreboard must NOT be hung from or mounted to a non-rigid support.
- Any mounting design provided by others and submitted for review or record shall bear the stamp and signature of a licensed professional engineer registered in the state of installation.

RETROFIT

- The scoreboard can be retro-fitted into an existing enclosure.
- The scoreboard must be anchored using its mounting frame and not the cabinet.

EYEBOLTS OR LIFTING POINTS

- The scoreboard can be easily lifted into place using a crane, boom truck, man lift, or scissor lift such as used by utilities and sign companies.
- The weight and dimensions of your scoreboard are shown on the installation drawing.
- When lifting the scoreboard, hook the slings or spreader bar cables into the holes of the **EYEBOLTS** or **HANGER BRACKETS** attached to the rear of the scoreboard.
- The **EYEBOLTS** may be removed after the scoreboard is secured.
- Caution stating that suspension cables must be vertical, as shown on page 9.

WARNING: Sectional or scoreboard models containing a "V" (xx-xxxx-V-xxxx) **MUST NOT** be suspended and must be wall mounted using the **WALL BRACKET**.

CAUTION: Suspension cables must be vertical, as shown on page 9.

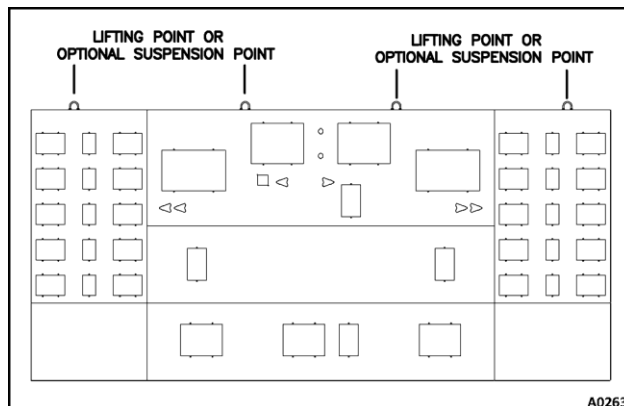


FIGURE 8 – LIFTING POINT OR SUSPENSION POINT

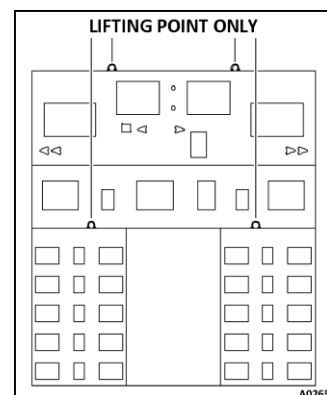


FIGURE 9 – LIFTING POINT ONLY

WALL MOUNTED

Wall mounting is the preferred method of installation for **SINGLE SIDED SCOREBOARDS**, Refer to Figure 10 for hanger bracket details. Mounting point is typically 1 1/4" from the top surface of the scoreboard:

- **Tile Wall** – Use a 3/8" toggle bolt with washer.
- **Masonry Wall** – Use a 3/8" expansion bolt with washer.

Refer to **Hanger Bracket Spacing** below for additional information.

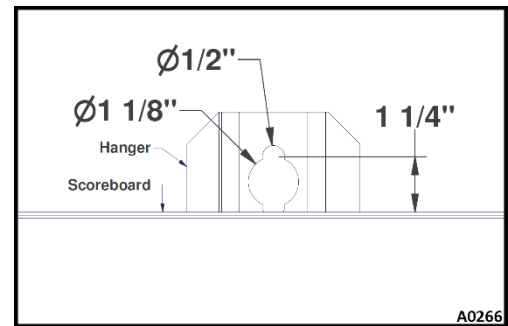


FIGURE 10 – HANGER BRACKET DETAIL

HANGER BRACKET SPACING

Refer to Figure 11 and corresponding dimensions on **Table 1 – Standard Hanger Bracket Spacing** Refer to face view & installation drawing for specific dimensions.

All support structure recommendations provided in this document are suggestions and should be reviewed by a licensed professional engineer certified in the region of the installation prior to construction. Fair-Play assumes no responsibility for installations done by others.

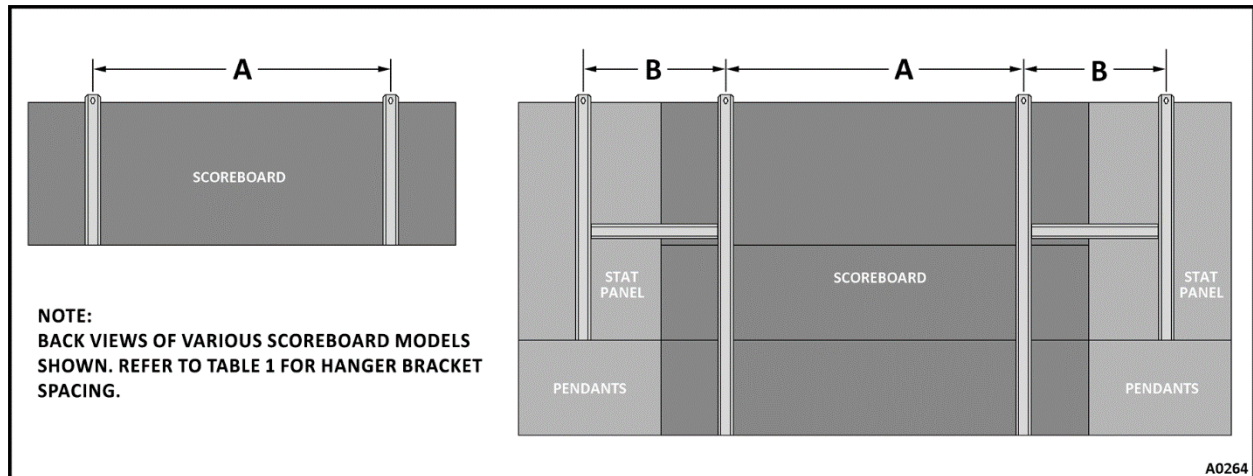


FIGURE 11 – HANGER BRACKET SPACING

Table 1 – STANDARD HANGER BRACKET SPACING

LENGTH OF SCOREBOARD	4'-6"	7'-0"	9'-0"	10'-0"	12'-0"	14'-0"	15'-0"	18'-0"	21'-0"
HANGER BRACKET SPACING A	42"	75 1/4"	75 1/4"	75 1/4"	75 1/4"	75 1/4"	75 1/4"	75 1/4"	75 1/4"
HANGER BRACKET SPACING B							36"	54"	66"

Notes:

1-sided scoreboards: Wall mounted using Hanger Brackets. Refer to **Hanger Bracket Spacing** on above. Unless otherwise specified, they can be suspended at the u-bolt lift points as well.

4-sided scoreboards: Suspended only.

If customer requires scoreboard mounting different than listed above, please contact a Sales Representative for review & approval.

SUSPENDED

WARNING: Sectional or scoreboard models containing a "V" (xx-xxxx-V-xxxx) **MUST NOT** be suspended and must be wall mounted using the WALL BRACKET.

WARNING: Failure to follow these guidelines could result in injury or death.

Except for scoreboard models having a "V" designation, if wall mounting is not possible then an optional suspension installation by cables (or chains) may be accomplished by following these simple guidelines:

- The load rating of suspension cables or chains must be greater than the actual weight of the scoreboard.
- The suspension cables must be attached to each of the eye bolts located on the top edge of scoreboard.
 - Two (2) suspension cables are required for each scoreboard or two (2) sided scoreboard.
 - Four (4) suspension cables are required for a four (4) sided scoreboard. Refer to Figure 12 below.

CAUTION: Attaching suspension cables to other parts of the cabinet is **NOT** permitted; as this may result in possible damage to your scoreboard or unsafe operation.

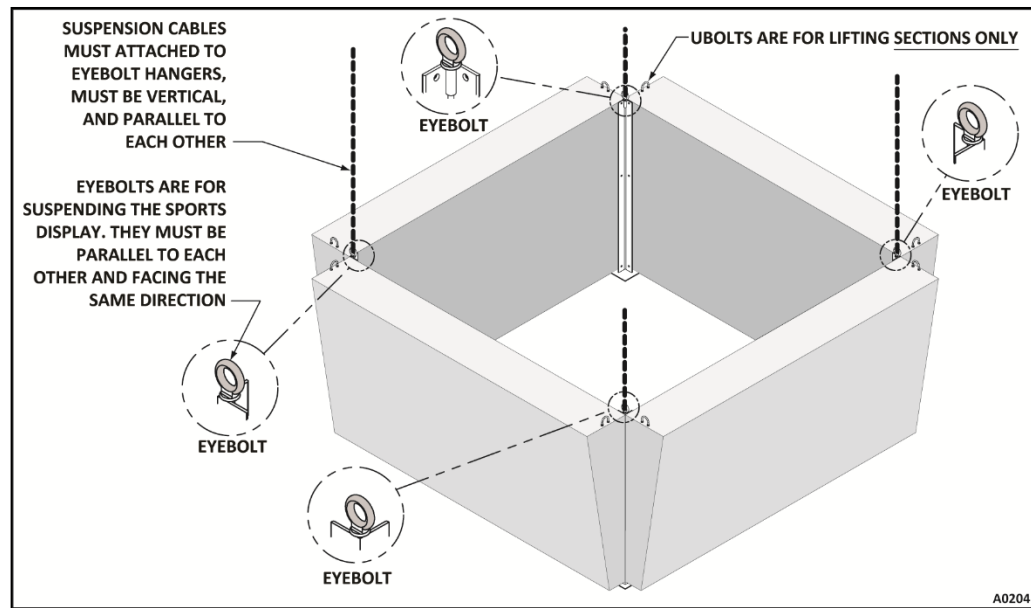


FIGURE 12 – FOUR-SIDED SCOREBOARD

- The suspension cables must be vertical and parallel to each other.

Caution: If cables are not vertical and parallel, they will be subject to higher stress loads which could result in damage to the hangers and your scoreboard.

- All **EYEBOLTS** must be parallel to each other and facing the same direction.
- A maximum of two (2) lightweight pendant signs of the Fair-Play PDI-XXXX model series are permitted to be attached to a suspended scoreboard.

WARNING: Any rear illuminated signs or other display equipment installed after the original and initial display has been designed and installed must be suspended separately on their own suspension system. They are **NOT** to be attached or suspended from a suspended scoreboard.

SCOREBOARD POWER & DATA

POWER

- Provide a dedicated power circuit to the scoreboard.
- All electrical hookups must meet local building codes including breaker sizing, grounding, and ground rod requirements.
- The power wires from the main service disconnect to the fused disconnect must contain an earth ground conductor. Refer to **Ground Wire** on page 11.
- Install a line filter, surge protector, or UPS (uninterruptible power supply) in areas of poor power quality.
- Wall mounted or suspended scoreboards must have separate conduits for data wires and power.
- Portable scoreboards require a standard 120 VAC grounded electrical outlet.

CONDUIT AND WIRING REQUIREMENTS

- Electrical load requirements are stated on the ID label — located on the right side of the scoreboard as you are facing the front.
- Refer to wiring diagram supplied with your equipment.
- Final connections are to be completed after scoreboards have been permanently fastened.
- Final connections must be performed by a qualified electrician or service technician.
- Mounting structures must not prevent full opening of hinged or sliding access panels.

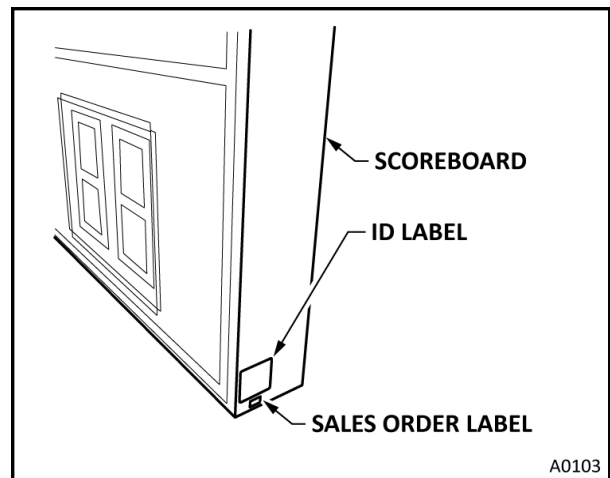


FIGURE 13 – ID LABEL

WARNING: *Make sure power source is disconnected. DO NOT make final connections with live power. Failure to do so could result in serious injury or death caused by electrocution.*

FUSED DISCONNECT

- **Scoreboard** – the customer must provide a fused disconnect for the scoreboard that is easily accessible and is within sight.

GROUND WIRE

The proper grounding of the electrical circuits and the scoreboard is an important aspect of an installation to ensure reliable operation, reduce potential lightning damage and for safety. Refer to Figure 14 and to Article 250.56 and 600 of the National Electric Code, and ANSI/IEEE 142-1.6.6. The location of the disconnect switch after installation shall comply with Section 600.6(A) of the National Electrical Code.

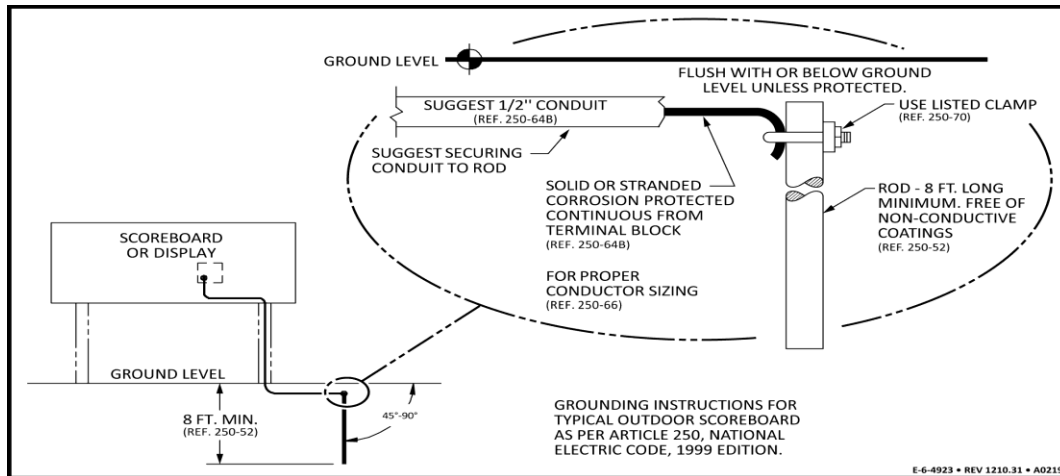


FIGURE 14 – TYPICAL GROUND WIRE CONNECTION

DATA IN – WIRED CONTROL

- **Portable Indoor Scoreboard** – a 10' foot data cord (with plugs) is provided for connecting from the MP-70/50 control to the scoreboard. Refer on page 6.
- **Single-Sided Scoreboard** – a 10' foot data cord (with plugs) is provided for connecting the MP-70/50 control to the **RECEPTACLE BOX**. Refer on page 12.
- **Four-Sided Scoreboard** – a 10' foot data cord (with plugs) is provided with the control for connecting the MP-70/50 to the **RECEPTACLE BOX**. Refer on page 16.

DATA IN – WIRELESS CONTROL

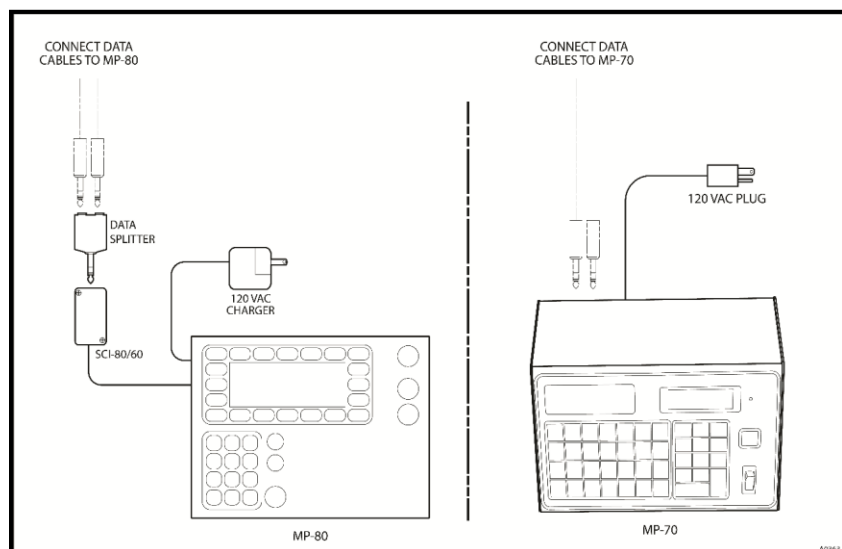
The external control cable and conduit are not required for wireless systems. A wireless receiver is installed inside the scoreboard which feeds data to the LED lamp driver(s). However, a wired connection can be installed as a backup connection option.

SCOREBOARD CONTROLLER

The control must be operated and stored in a dry location. Refer to the user manual for the operation and maintenance of your control.

WIRED CONTROL DATA CONNECTIONS

The data cable(s) from the scoreboard(s) must be connected to the MP-70/50 or MP-80 as shown in the diagram to the right.



SINGLE-SIDED SCOREBOARD

CAUTION: *DO NOT route incoming power and data control cable in the same conduit as this may cause interference with the operation of the scoreboard.*

NOTE: *DO NOT route cable through cable passages without using a grommet, plastic bushing, or edge protection. If grommet, plastic bushing, or edge protection is missing, seek one from your local supplier or contact Fair-Play.*

1. Pry open the conduit knock-outs located at the top of the scoreboard.
2. Access the wiring compartment:
 - a. **MINUTES DIGIT PANEL** – loosen the retaining screws, then move the panel out of the way.
 - b. **HOME SCORE PANEL** – loosen the retaining screws, then move or flip the panel out of the way.

CAUTION: *DO NOT unplug existing wire connections.*

3. **POWER** – refer to Figure 15 on page 13.

WARNING: *Make sure power source is disconnected. DO NOT make final connections with live power. Failure to do so could result in serious injury or death caused by electrocution.*

- a. Locate the white, green and black power wires coiled inside the wiring compartment.
 - b. Connect incoming power:
 - Neutral – white
 - Line 1 – black
 - Ground – green.
4. **DATA** – refer to Figure 15 on page 13.

For optimum data transmission, avoid splices in the twisted wires to the scoreboard. The twisted wires must be long enough to reach from the **RECEPTACLE BOX** to the **DATA IN** jack of the scoreboard.

Connect the shield wire at one end only of the data cable. Connecting the shield at both ends may cause a ground loop, which could lead to erratic operation of the scoreboard.

- a. Outside the scoreboard:
 - i. Install the **RECEPTACLE BOX** within 10 feet of the control.
 - ii. Install a dedicated conduit (1/2" or larger) to the scoreboard.
 - iii. Solder the twisted wires to the **DATA JACK**.
 - iv. Route the twisted wires through the conduit and into the scoreboard.
 - v. Install **DATA JACK** to **RECEPTACLE BOX**.
 - b. Inside the scoreboard:
 - i. Solder the twisted wires to the **DATA PLUG**.
 - ii. Connect data plug to the **DATA IN** jack.
5. Reinstall the **MINUTES DIGIT PANEL**.

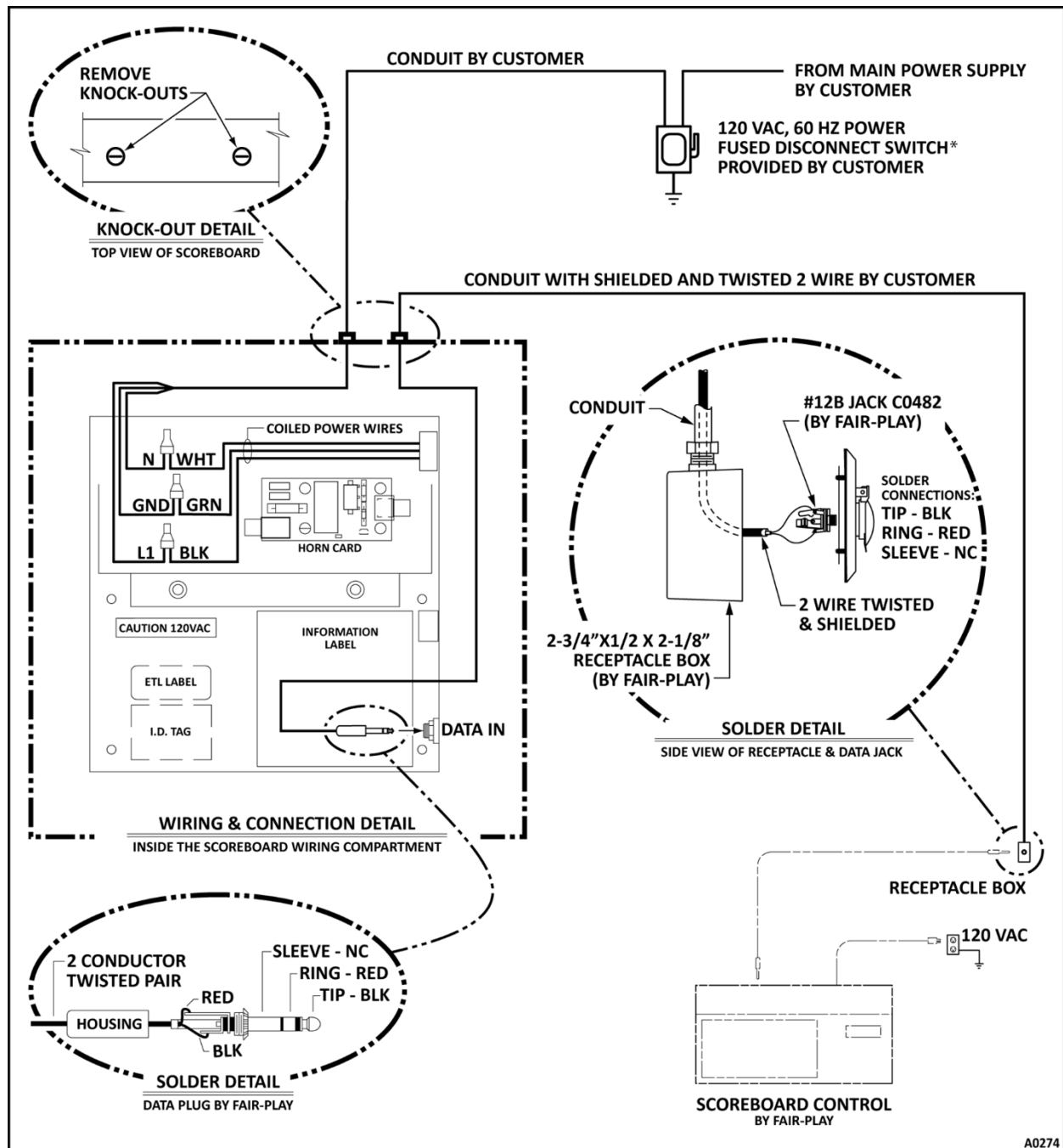


FIGURE 15 – SINGLE-SIDED: SCOREBOARD POWER & DATA CONNECTIONS

*The location of the disconnect switch after installation shall comply with Section 600.6(A) of the National Electrical Code.

Two-Sided Scoreboard

CAUTION: *DO NOT route incoming power and data control cable in the same conduit as this may cause interference with the operation of the scoreboard.*

NOTE: *DO NOT route cable through cable passages without using a grommet, plastic bushing, or edge protection. If grommet, plastic bushing or edge protection is missing, seek one from your local supplier or contact Fair-Play.*

1. **Access the wiring compartment** – loosen the retaining screws of the **HOME SCORE PANEL** and move or flip the panel out of the way.

CAUTION: *DO NOT unplug existing wire connections.*

2. **POWER** – refer to Figure 16 on page 15.
 - a. Remove the hole plug marked **POWER** located on top of the **SCOREBOARD**.
 - b. Route conduit to the hole, then route wires through conduit and connect to **FUSED TERMINAL BLOCK**.

WARNING: *Make sure power source is disconnected. DO NOT make final connections with live power. Failure to do so could result in serious injury or death caused by electrocution.*

- c. Reinstall **HOME SCORE PANEL**.
3. **DATA** – refer to Figure 16 on page 15.

For optimum data transmission, avoid splices in the twisted wires to the scoreboard. The twisted wires must be long enough to reach from the **RECEPTACLE BOX**, through the customer provided **JUNCTION BOX**, and to the scoreboard.

Connect the shield wire at one end only of the data cable. Connecting the shield at both ends may cause a ground loop, which could lead to erratic operation of the scoreboard.

- a. **RECEPTACLE BOX to JUNCTION BOX:**
 - i. Install the **RECEPTACLE BOX** within 10 feet of the control.
 - ii. Install the **JUNCTION BOX** (provided by customer) near the scoreboard.
 - iii. Install a dedicated conduit (1/2" or larger provided by customer) from the **RECEPTACLE BOX** to the **JUNCTION BOX**.
 - iv. Solder the twisted wires to the **DATA JACK** – refer to Figure 16 on page 15.
 - v. Route the twisted wires through the conduit, through the **JUNCTION BOX**, and to the scoreboard.
 - vi. Install **DATA JACK** to **RECEPTACLE BOX**.
- b. **JUNCTION BOX to SCOREBOARD:**
 - i. Secure twisted wires with strain relief at the **JUNCTION BOX**.
 - ii. Solder twisted wires to the **DATA PLUG** – refer to Figure 16 on page 15.
 - iii. Connect the **DATA PLUG** to the **DATA IN** jack located on the side of the scoreboard.

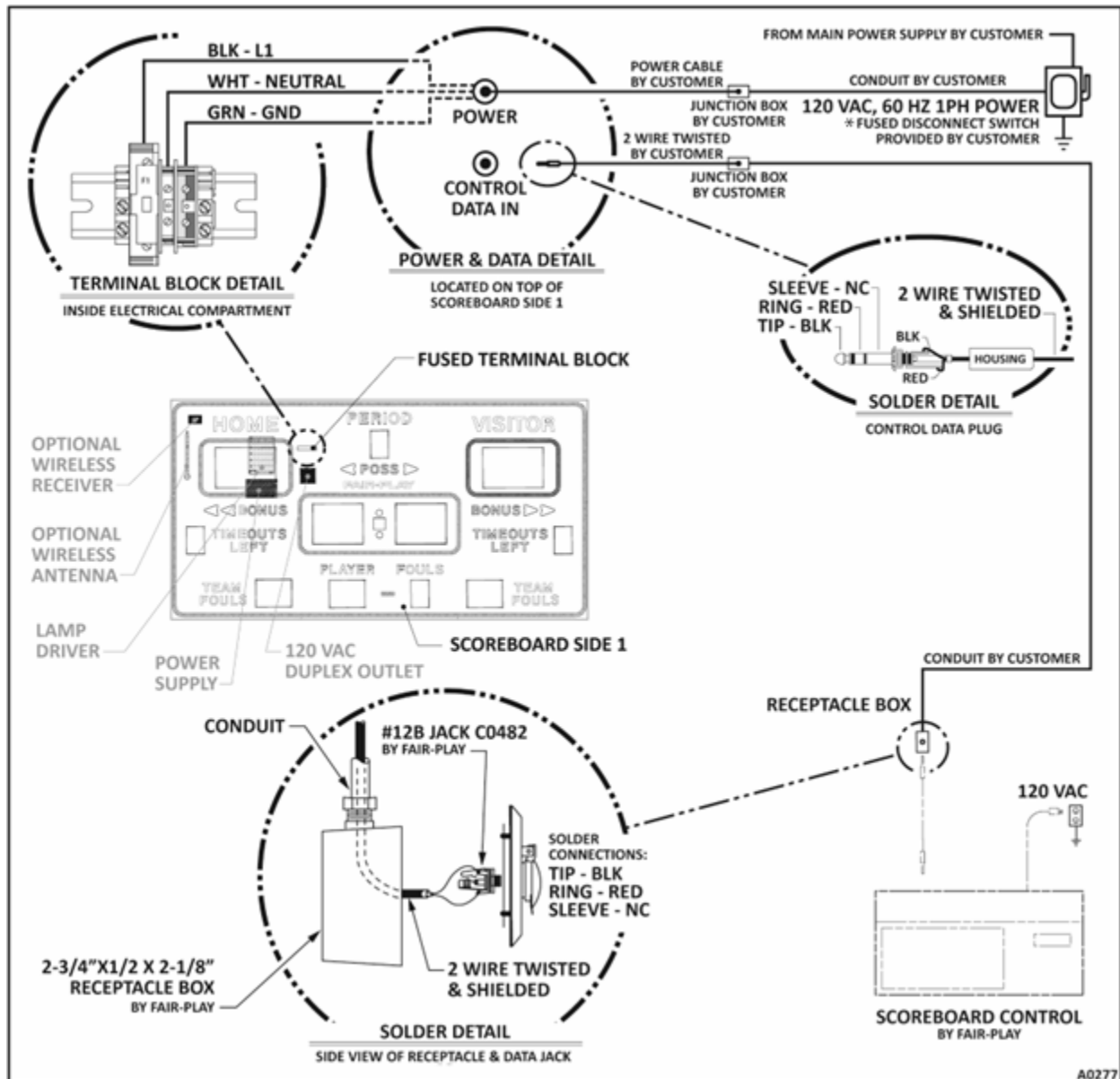


FIGURE 16 – TWO-SIDED: SCOREBOARD POWER & DATA CONNECTIONS

*The location of the disconnect switch after installation shall comply with Section 600.6(A) of the National Electrical Code.

FOUR-SIDED SCOREBOARD

CAUTION: *DO NOT route incoming power and data control cable in the same conduit as this may cause interference with the operation of the scoreboard.*

NOTE: *DO NOT pass cable through any cable passages without using a grommet, plastic bushing, or edge protection to protect the cable. If grommet, plastic bushing or edge protection is missing, seek one from your local supplier or contact Fair-Play.*

1. Depending on the model, access the internal compartment of **SCOREBOARD SIDE 1** using one of the following methods:

- **Rear Access Cover** – on the rear of the scoreboard, loosen the screws of the **REAR ACCESS COVER** and move the cover out of the way.
- **Home Score Panel** – if there is no **REAR ACCESS COVER**, loosen the retaining screws of the **HOME SCORE PANEL** and move or flip the panel out of the way.

CAUTION: *DO NOT unplug existing wire connections.*

2. **POWER** – refer to Figure 17 on page 17.
 - a. Remove the hole plug marked **POWER** located on the rear of **SCOREBOARD SIDE 1**.
 - b. Route conduit to the hole, then route wires through conduit and connect to **FUSED TERMINAL BLOCK**.

WARNING: *Make sure power source is disconnected. DO NOT make final connections with live power. Failure to do so could result in serious injury or death caused by electrocution.*

- c. Reinstall **HOME SCORE PANEL** or **REAR ACCESS COVER**.
3. **DATA** – refer to Figure 17 on page 17.

For optimum data transmission, avoid splices in the twisted wires to the scoreboard. The twisted wires must be long enough to reach from the **RECEPTACLE BOX**, through the customer provided **JUNCTION BOX**, and to the scoreboard.

Connect the shield wire at one end only of the data cable. Connecting the shield at both ends may cause a ground loop, which could lead to erratic operation of the scoreboard.

- a. **RECEPTACLE BOX to JUNCTION BOX:**
 - i. Install the **RECEPTACLE BOX** within 10 feet of the control.
 - ii. Install the **JUNCTION BOX** (provided by customer) near the scoreboard.
 - iii. Install a dedicated conduit (1/2" or larger provided by customer) from the **RECEPTACLE BOX** to the **JUNCTION BOX**.
 - iv. Solder the twisted wires to the **DATA JACK** – refer to Figure 17 on page 17.
 - v. Route the twisted wires through the conduit, through the **JUNCTION BOX**, and to the **SCOREBOARD 1**.
 - vi. Install **DATA JACK** to **RECEPTACLE BOX**.
- b. **JUNCTION BOX to SCOREBOARD 1:**
 - i. Secure twisted wires with strain relief at the **JUNCTION BOX**.
 - ii. Solder twisted wires to the **DATA PLUG** – refer to Figure 17 on page 17
 - iii. Connect the **DATA PLUG** to the **DATA IN** jack located on the back of **SCOREBOARD 1**.

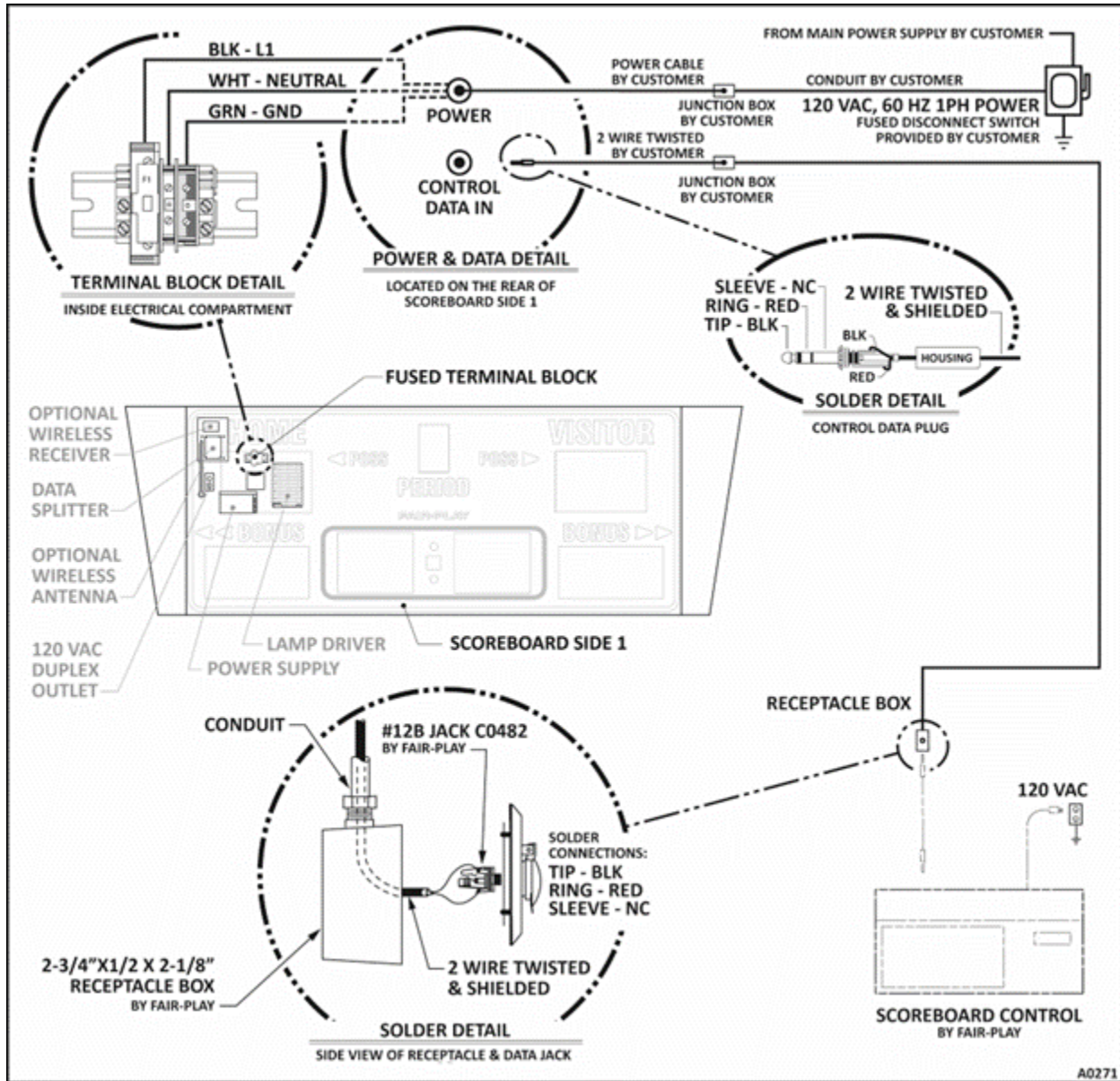


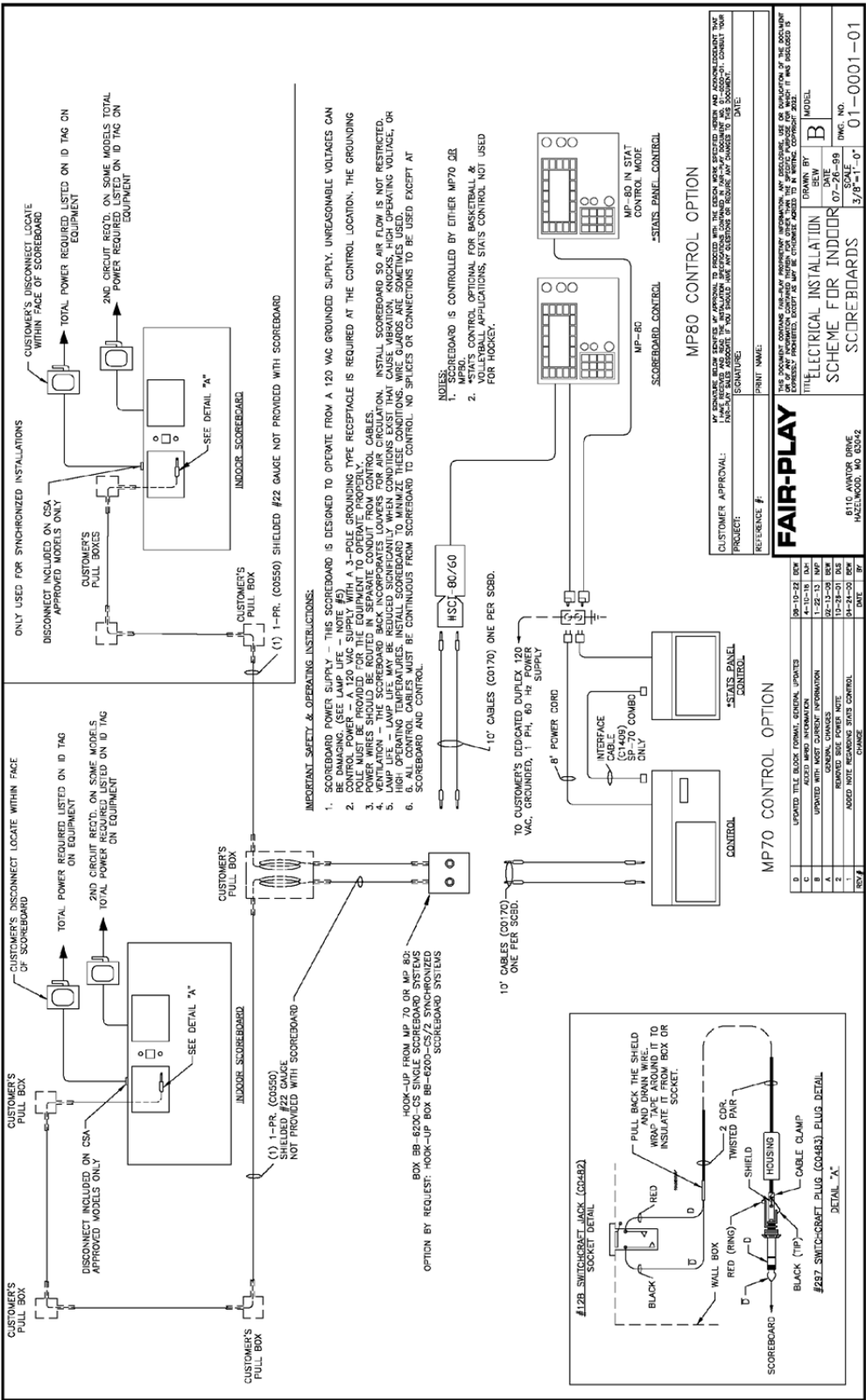
FIGURE 17 – FOUR-SIDED: SCOREBOARD POWER & DATA CONNECTIONS

*The location of the disconnect switch after installation shall comply with Section 600.6(A) of the National Electrical Code.

CONNECTION DIAGRAMS

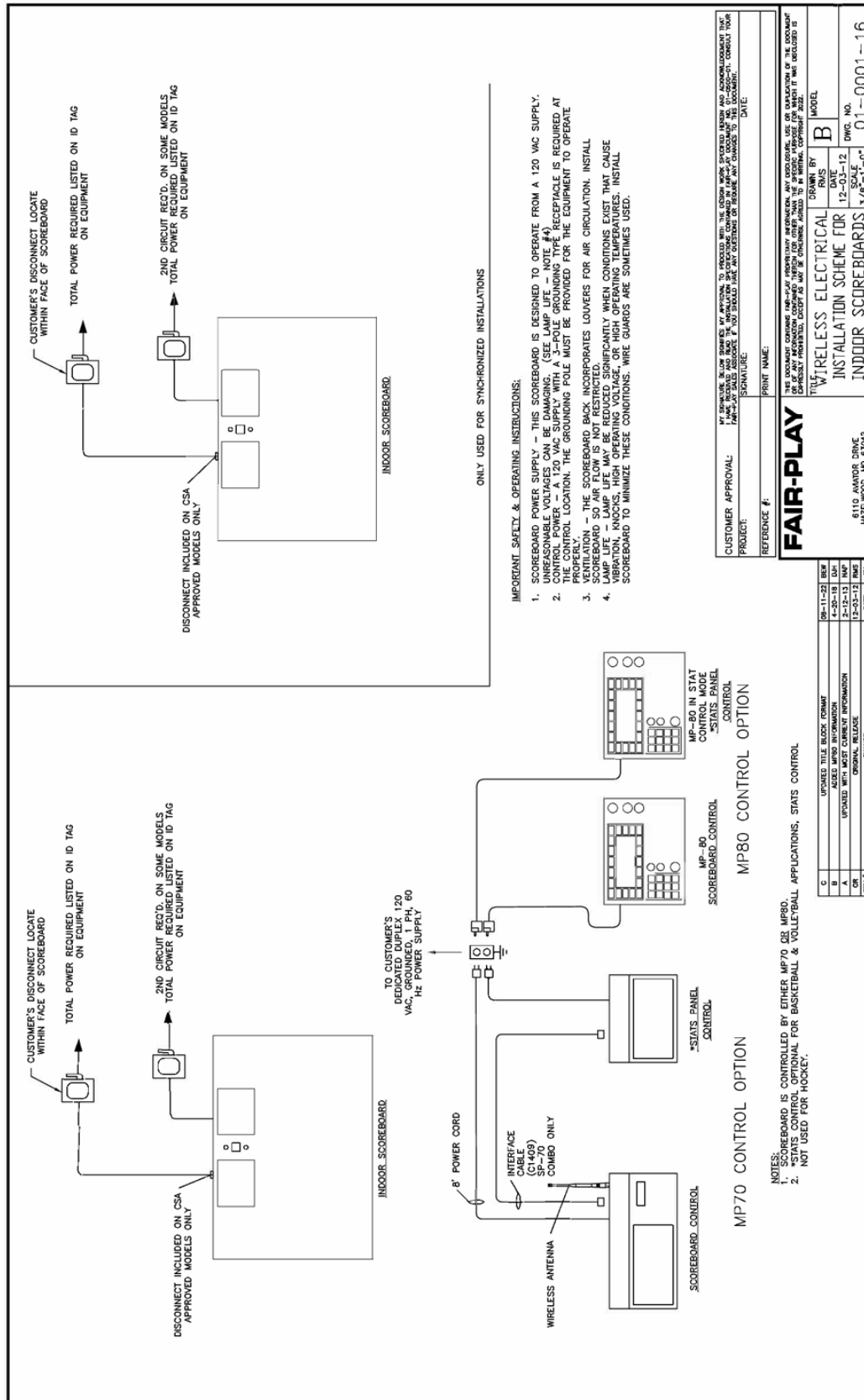
01-0001-01 DIRECT WIRE

The data from the scoreboard control is connected directly to the scoreboard.



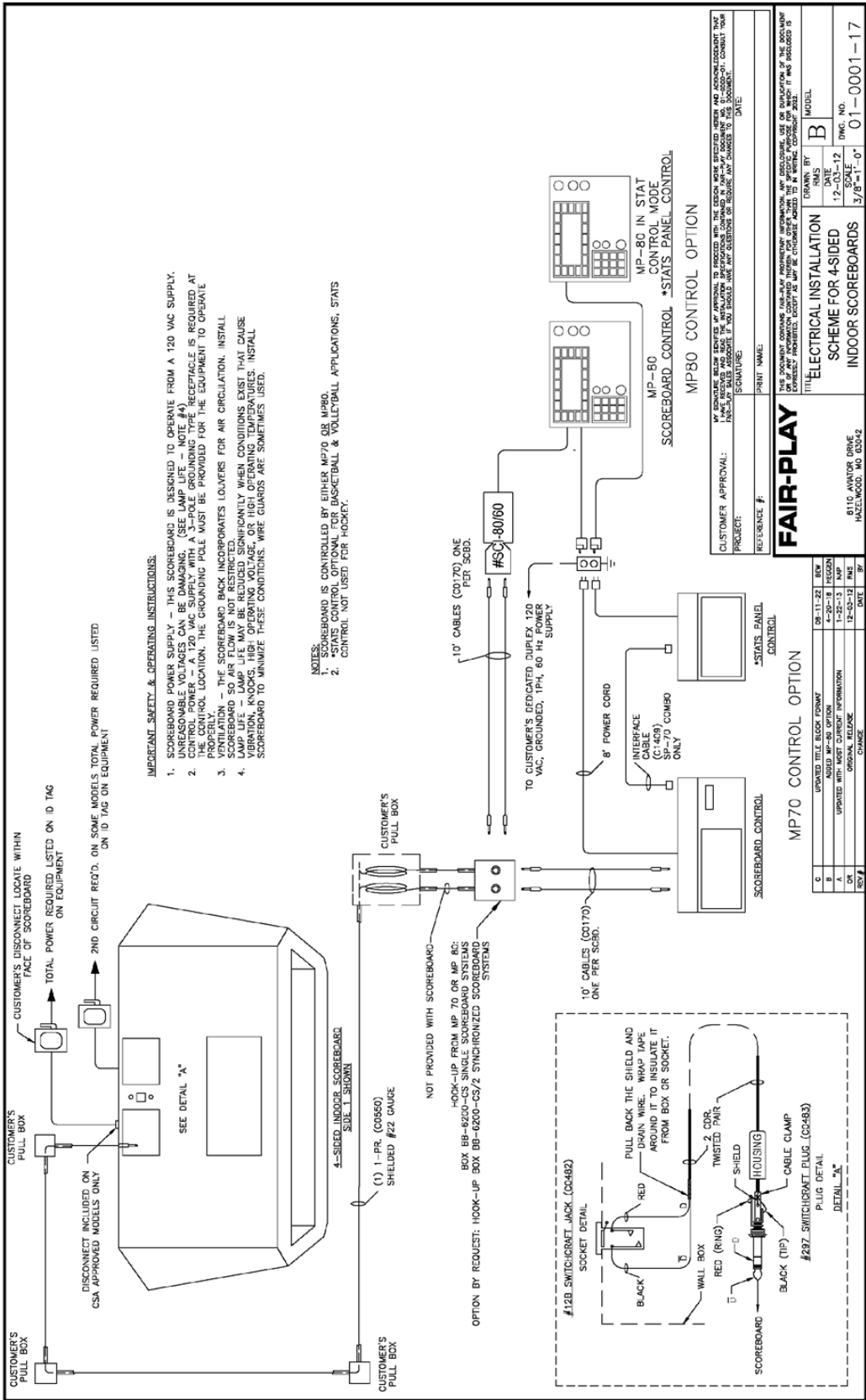
01-0001-16 WIRELESS

Data from the scoreboard control is transmitted via G3 wireless radio to the scoreboard.



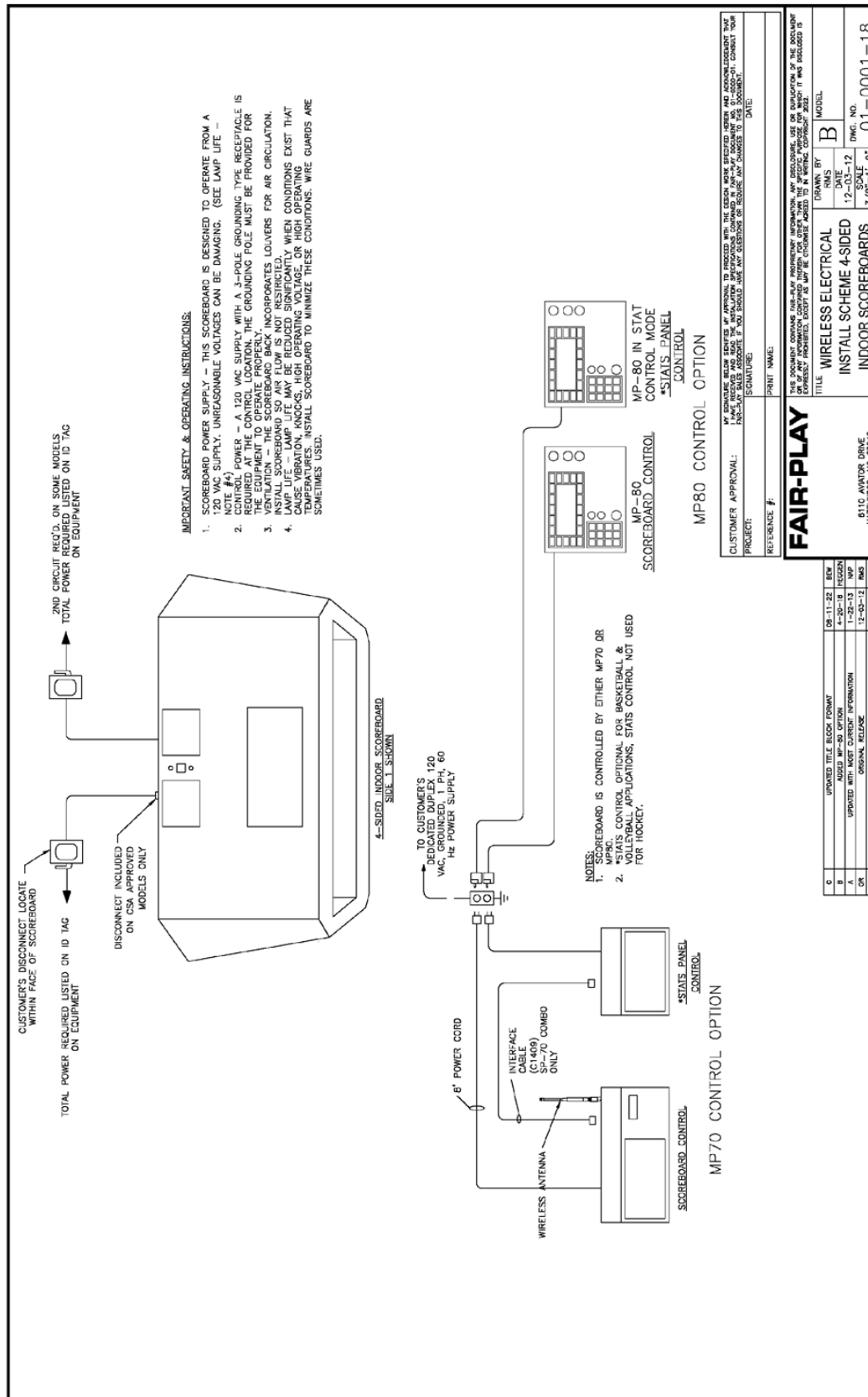
01-0001-17 FOUR-SIDED DIRECT WIRED

Data from the scoreboard control is transmitted via direct wire to the 4-sided scoreboard.



01-0001-18 FOUR-SIDED WIRELESS

Data from the scoreboard control is transmitted via G3 wireless radio to the 4-sided scoreboard.



LED DISPLAY INSTALLATION

SAFETY REQUIREMENTS

- Comply with all applicable city, county, state and federal laws and regulations adopted pursuant thereto.
- Provide all measures necessary to protect the workmen and other persons during construction. Provide all necessary measures to avoid excessive stresses and to hold the structural elements in place during construction. Such measures shall include, but not be limited to, bracing; shoring for construction equipment; scaffolding; safety nets; support and bracing for cranes and hoists; guying, etc.

RIGID SUPPORT STRUCTURE

- The LED display must be hung from or mounted to a rigid support structure in accordance to local codes. The LED display must NOT be hung from or mounted to a non-rigid support.
- Any mounting design provided by others and submitted for review or record shall bear the stamp and signature of a licensed professional engineer registered in the state of installation.

RETROFIT

The LED display can also be retro-fitted into an existing enclosure. The LED display must be anchored using its mounting frame and not the cabinet. See Figure 22 on page 25.

WALL MOUNTED

Wall mounting is the preferred method of installation. Refer to the installation and frame drawing for your specific order. Figure 18 shows the typical frame installation.

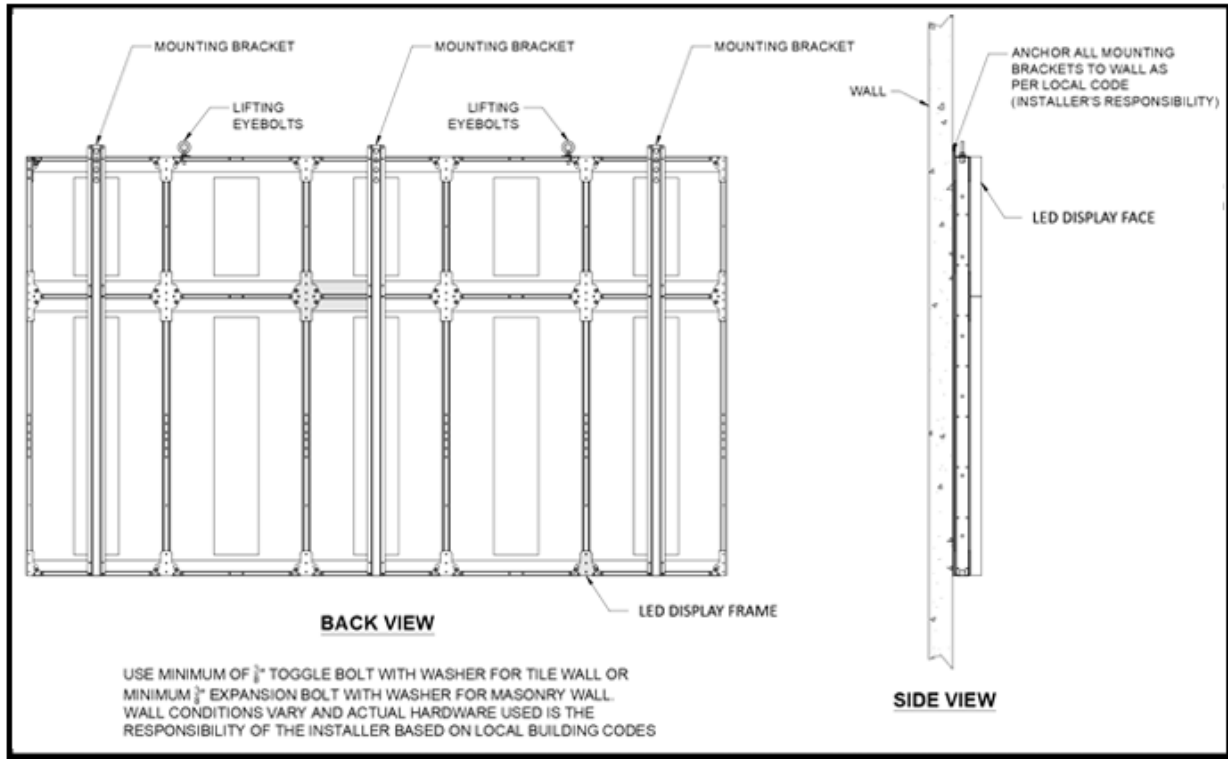


FIGURE 18 — MOUNTING BRACKET

SUSPENDED

If wall mounting is not available, an optional suspension installation by cables (or chains) may be accomplished by following these simple guidelines:

WARNING: *Failure to follow these guidelines could result in injury or death.*

1. The load rating of suspension cables or chains must be greater than the actual weight of the LED display.
2. The suspension cables must be attached to each of the eye bolts located on the top edge of LED display.
 - Two (2) suspension cables are required for each LED display or
 - Four (4) suspension cables are required for a four (4) sided LED display. Refer to Figure 19 below.

Caution: *Attaching suspension cables to other parts of the cabinet is NOT permitted; as this may result in possible damage to your LED display or unsafe operation.*

3. The suspension cables must be vertical and parallel to each other.

Caution: *If cables are not vertical and parallel, they will be subject to higher stress loads which could result in damage to the hangers and your LED display.*

4. All eyebolts must be parallel to each other and facing the same direction. See Figure 19 below.
5. A maximum of two (2) lightweight pendant signs of the Fair-Play PDI-XXXX model series are permitted to be attached to a suspended LED display.

WARNING: *Any rear illuminated signs or any other display equipment installed after the original and initial display has been designed and installed must be suspended separately on their own suspension system. They are NOT to be attached or suspended from a suspended scoreboard.*

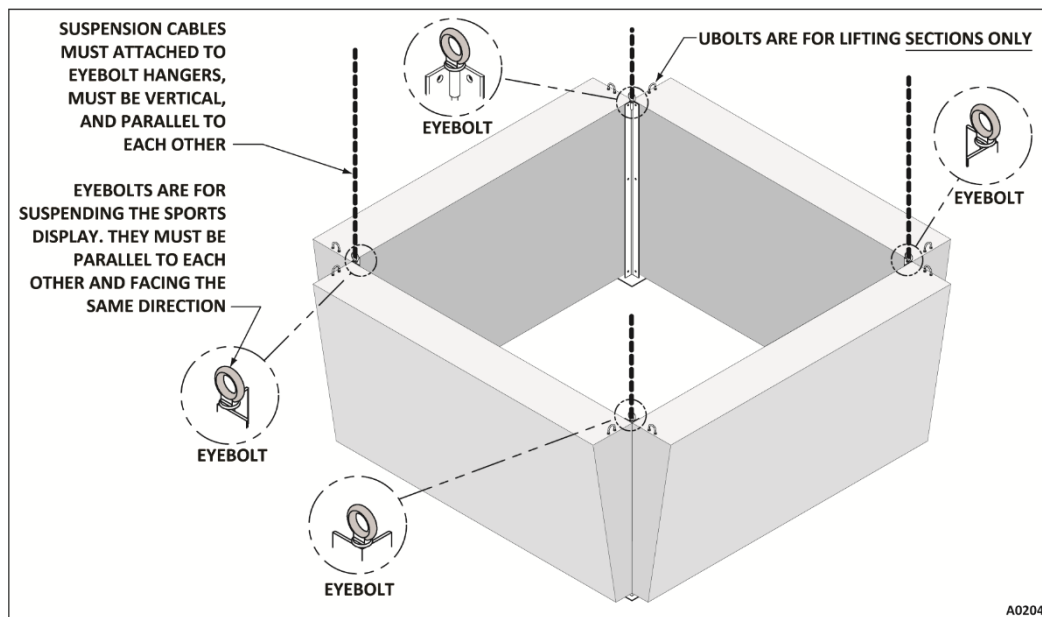


FIGURE 19 – FOUR-SIDED LED DISPLAY

LIFTING EYE-BOLTS AND MOUNTING BRACKET

- The LED display can be easily lifted into place using a crane, boom truck, man lift, or scissor lift such as used by utilities and sign companies. The weight and dimensions of your LED display are shown on the installation drawing.
- When lifting the LED display, hook the slings or spreader bar cables into the eye-bolts attached to the frame.
- The eye-bolts may be removed after the LED display is secured to the wall.

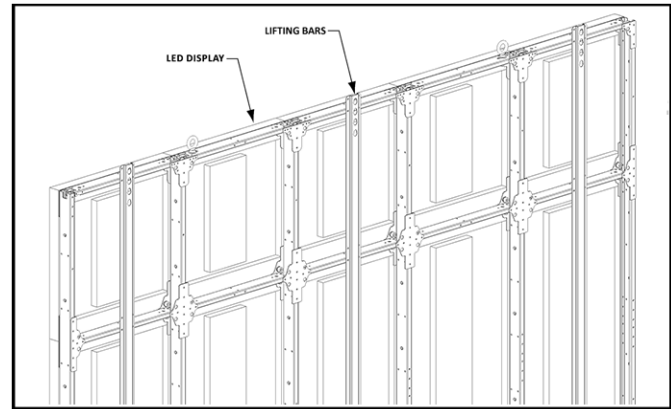


FIGURE 20 – LIFTING BARS

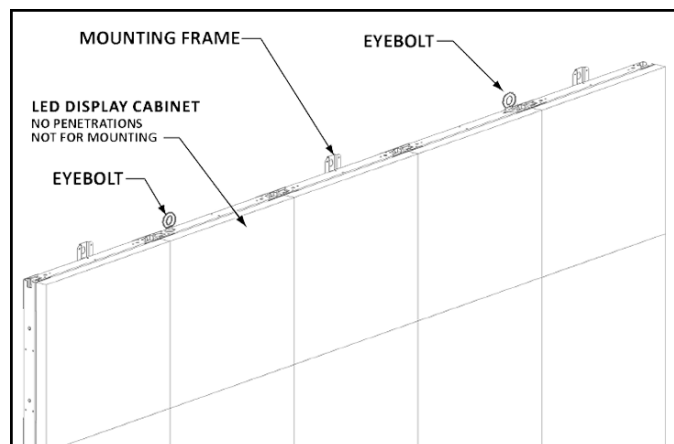


FIGURE 21 — MOUNTING FRAME

SPLIT CABINETS

- All split cabinet sections must be installed in their correct location. See the installation and frame drawing specific to your order for detailed information. See Figure 22 below for generalized shipping section layout.
- Follow all installation notes on the frame drawing provided with your order.
- All data cable wires must be routed and reconnected to operate all sections. Refer to Figure 24 on page 28 and Figure 19 on page 24.

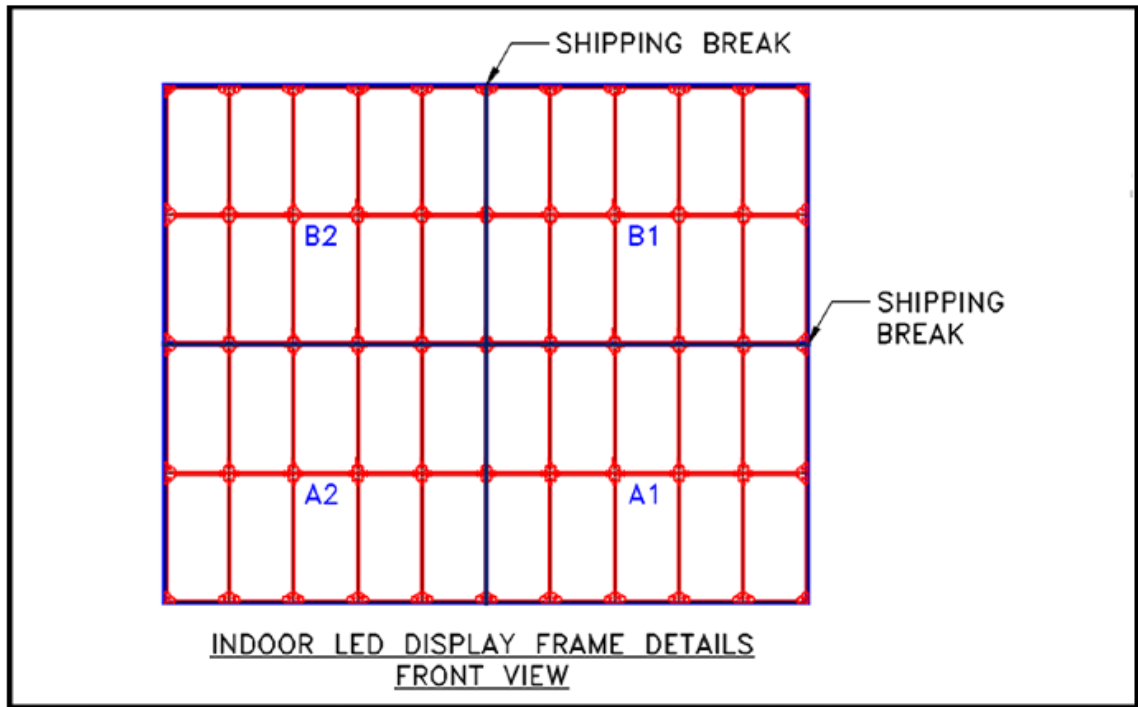


FIGURE 22 — INSTALL LED DISPLAY SECTIONS

LED DISPLAY POWER & DATA

CONDUIT AND WIRING REQUIREMENTS

- Electrical load requirements are stated on the ID label — located near the power plug behind each panel module.
- Refer to wiring diagram supplied with your equipment.
- Final connections are to be completed after LED display has been erected and permanently fastened.
- Final connections must be performed by a qualified electrician or service technician.

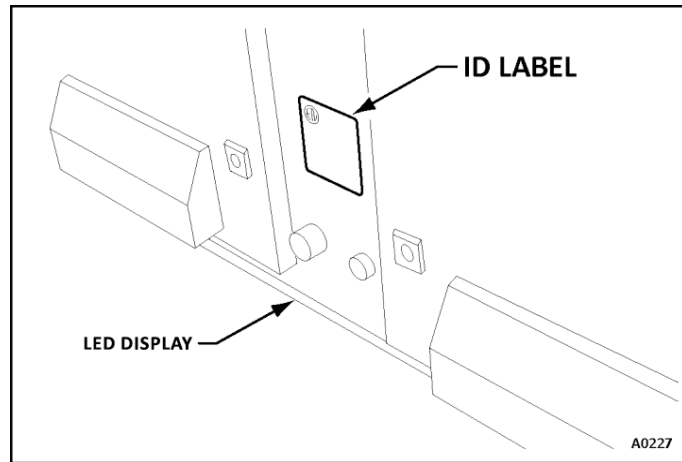


FIGURE 23 — ID LABEL

- Routing of field installed power and data cables inside the product must be done so that access to hinged power supply doors, modules, breaker cabinets or other components is not inhibited.
- Mounting structures must not prevent full opening of hinged or sliding access panels.

WARNING: *Make sure power source is disconnected. Do not make final connections with live power. Failure to do so could result in serious injury or death caused by electrocution.*

POWER

- Provide a dedicated power circuit to the LED display.
- All electrical hookup meets local building codes including breaker sizing, grounding, and ground rod requirements.
- The power wires from the main service disconnect to the fused disconnect must contain an earth ground conductor. Refer to on page 29.
- Install a line filter, surge protector, or UPS (uninterruptible power supply) in areas of poor power quality.
- Data cables and power cables are to be routed in separate conduits.

POWER JUNCTION BOX

The customer must provide a power junction box within easy access.

FUSED DISCONNECT

The customer must provide a fused disconnect for the LED display that is easily accessible and is within sight of the LED display. Refer to Figure 24 below.

120 VAC SINGLE PHASE

- A plug is provided on the rear of the LED display modules for the power cable.
- Unless specified otherwise, the LED display is wired for connection to a 120 VAC single phase; two-wire grounded power supply.
- Total power required, when all LEDs or lamps are turned on is listed on the identification label located on the back of the LED display. See Figure 23 on page 27. Wire size should be determined by a local electrician typically determined by both load and wire lengths

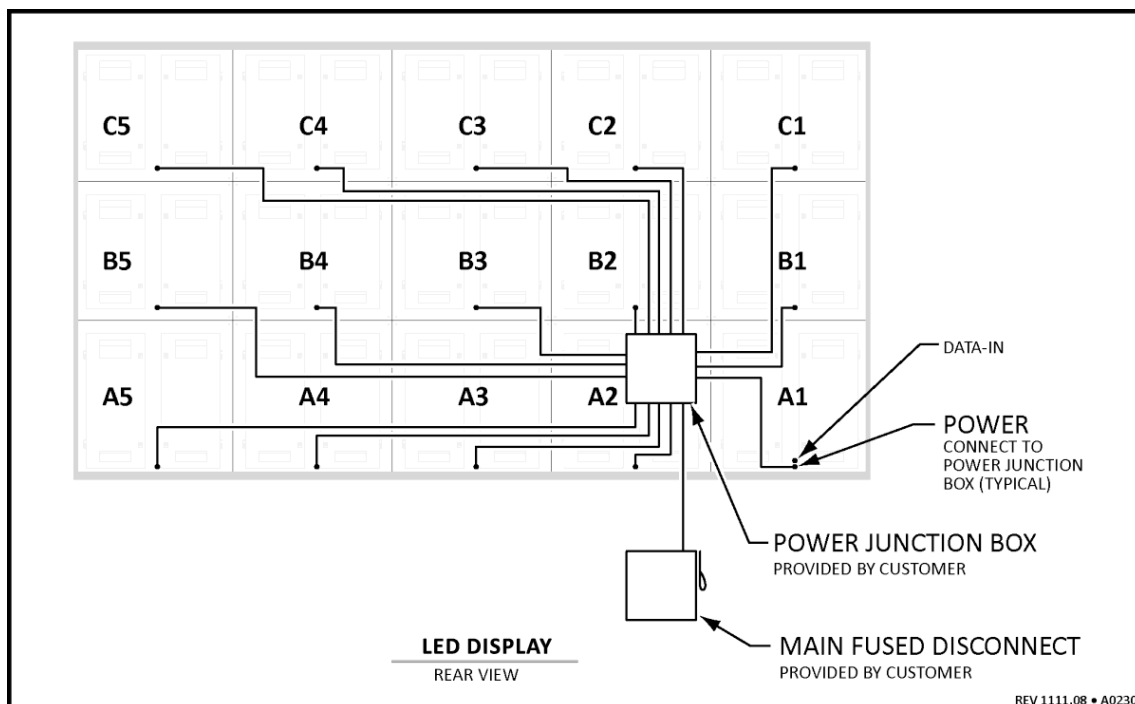


FIGURE 24 — POWER CABLE CONNECTIONS

DATA ROUTING

Please refer to the Fair-Play provided Data Routing Drawing specific to your order as the primary document that should be followed. Below is general connection information.

There are 3 types of data connections: Fiber, Cat5 (Copper), Wireless

FIBER CONNECTION

Refer to Figure 26 below:

1. This is the recommended connection method for outdoor installations.
2. Hook up the content computer to the sending box (controller) with the required video cable.
3. Plug in cat5 jumper cable from sending box output 1 to the cat5 input on the CVT fiber converter box.
4. Plug the fiber pair into the fiber convert box input. Note the fiber color and its position while plugging into the converter box.
5. At the LED display, likely in an outdoor waterproof box (NEMA box), plug the fiber pair into the converter box. The color needs to be the reverse order of connection at the sending box.
6. Plug a cat5 jumper cable from the fiber converter box to the back of the cabinet with the first receiver card in the sign. Please reference the data routing drawing for data connection hook up in the sign.
7. On most LED products, there is a Data-In port on the rear of the display cabinets.

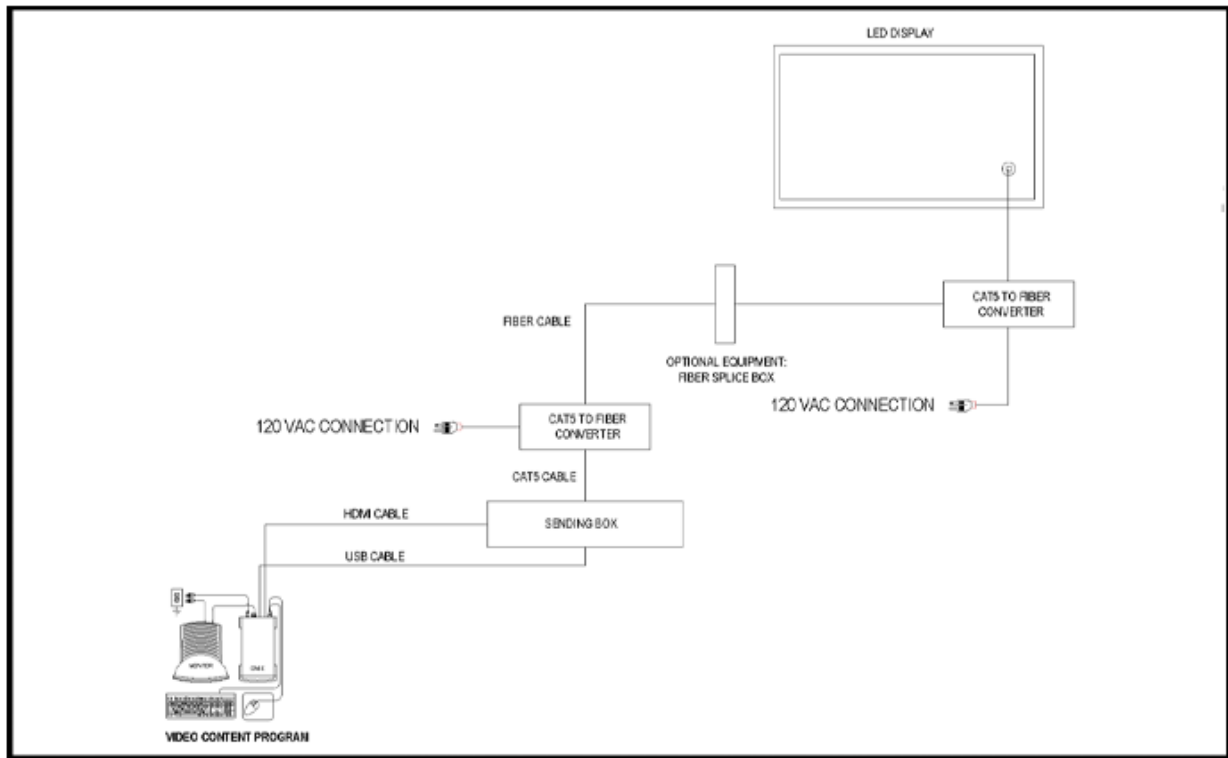


FIGURE 26 — DIRECT FIBER CONNECTION

CAT5 CONNECTION (COPPER)

Refer to Figure 27 below:

1. Hook up the content computer to the sending box (Controller) with the required video cable.
2. Run cat5 cable from sending box location to the LED display (Maximum distance 300 feet).
3. Hook cat 5 cable to the sending box output 1.
4. At the sign hook the cat 5 cable to the first receiver card. Please reference the data routing drawing specific to your order to determine which cabinet to connect a data cable to and how to route data through the display.

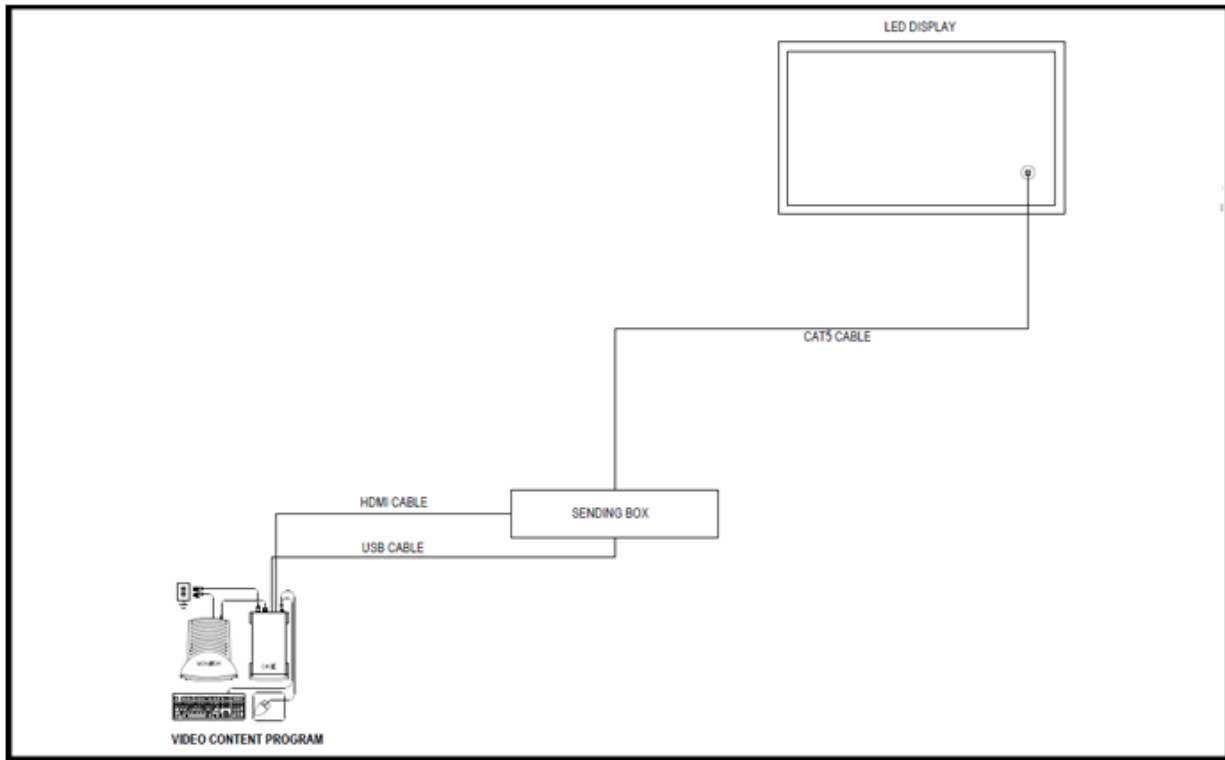


FIGURE 27 — CAT5 CONNECTION

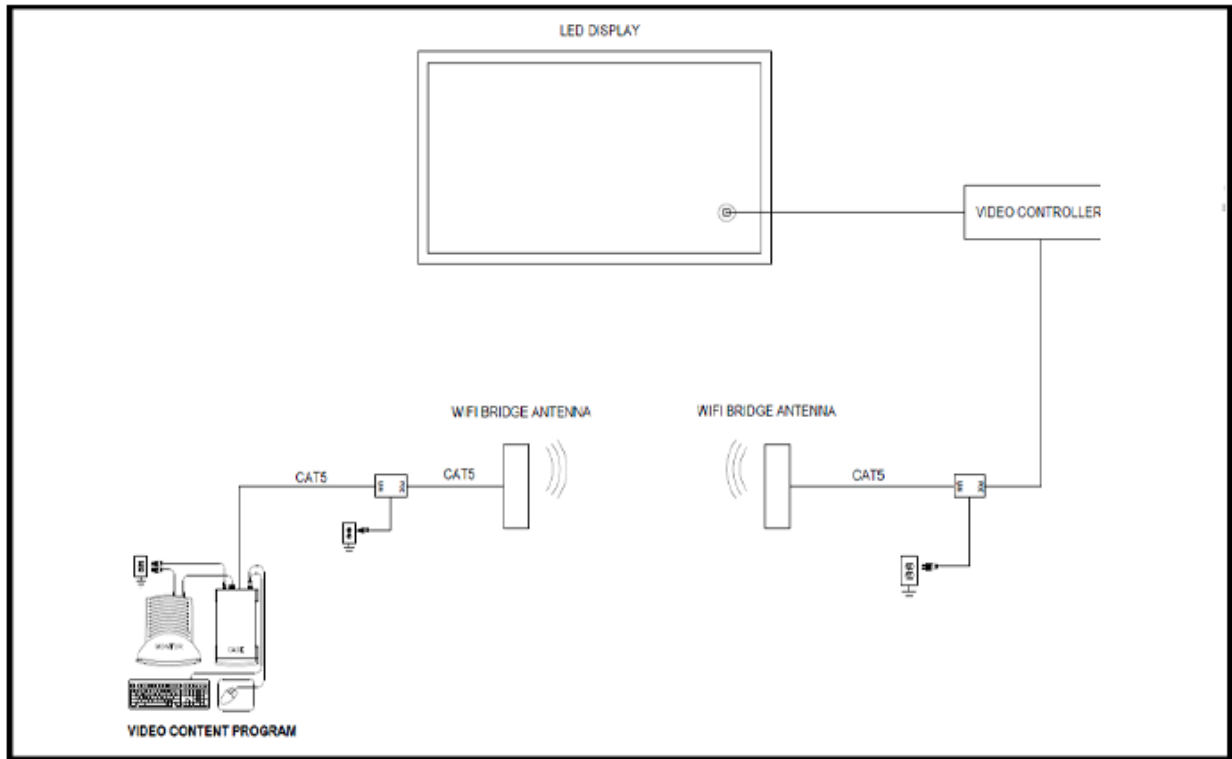
WIRELESS CONNECTION

Refer to Figure 28 on page 32:

1. Hook a cat5 cable to the wireless power supply; the connection input should be labeled LAN.
2. Hook the other end of the cat5 cable to the computer that will be used to control the LED display.
3. The wireless antenna should be mounted on the building with line of sight to the display. Hook the cat5 cable from the power supply connector labeled power over Ethernet (POE) box.
4. Attach the other end of the cat5 cable to the main Ethernet port of the antenna.

WIRELESS CONNECTION (CONT.)

5. Make sure the antenna at the display is mount in a location that has line of sight with the antenna at the building.
6. Hook the cat5 cable from the outdoor NEMA box enclosure labeled (wireless) to the wireless antenna.
7. Hook the cat5 cable labeled sign to the cabinet with the first receiver card of the display. Please reference the data routing drawing specific to your order to determine which cabinets to connect a data cable to and how to route data through the display.
8. Hook 120 VAC power to the NEMA box to power the devices inside.

**FIGURE 28 — WIRELESS CONNECTION**

OPTIONAL EQUIPMENT

PROLINE MATRIX SCOREBOARD

- Proline connection to MP70/MP80 is optional equipment.
- Please use document 98-0019-58 for instructions for connection setup.

SPORTS CONTROLLER

- MP70/MP80 scoreboard controller:
Please use document 98-0002-29 for MP70 operation.
Please use document 98-0090-01 for MP80 operation.

HAND SWITCH

- Hand switch for MP70 is a wired connection, the hand switch for the MP80 is a wireless connection.
- Please use document 98-0005-01HS_GL for setup and operation of the MP70 hand switch.
- Please use document 98-0091-01 Wireless Sideline Hand Switch Manual for setup and operation of the MP80 hand switch.

VIDEO DISPLAY HORN BOX

- Allows horns for video display systems.
- Please refer to document 98-0020-04 for installation instructions.

HORN

- Horns are optional and are not available on all models.
- Horns are shipped separate and installed by customer. Refer to 98-0020-03 Installation instructions for Indoor Horns.

Caution: *Horns purchased from third party sources cannot be guaranteed and are not recommended for use without express written approval by Fair-Play. Electrical loads imposed by unauthorized horns may damage the circuits and void the warranty.*

NOTES