

**MS-2113 PORTABLE
LED SCOREBOARD**

DISPLAY MANUAL

P1192

DD3277683
Rev 07
27 June 2024



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1 Introduction

This manual outlines specifications, operation, and troubleshooting for Daktronics portable LED scoreboard model MS-2113. For additional information regarding the safety, installation, operation, or service of these displays, refer to **Section 7: Daktronics Exchange and Repair & Return Programs (p.21)**. This manual is not specific to a particular installation. Project-specific information takes precedence over any other general information found in this manual.

Important Safeguards

- **Read and understand all instructions before first use.**
- **Toggle the power switch to "OFF" when not using the display.**
- **Disconnect the batteries and turn the power switch "OFF" when servicing the display.**
- **Do not modify the structure or attach any panels or coverings to the display without the express written consent of Daktronics.**
- **Do not disassemble the control equipment or the electronic controls of the display; failure to follow this safeguard will make the warranty null and void.**
- **Do not drop the control equipment or allow it to get wet.**

Specifications Label

Power specifications as well as serial and model number information can be found on an ID label on the display, similar to the one shown in **Figure 1**.

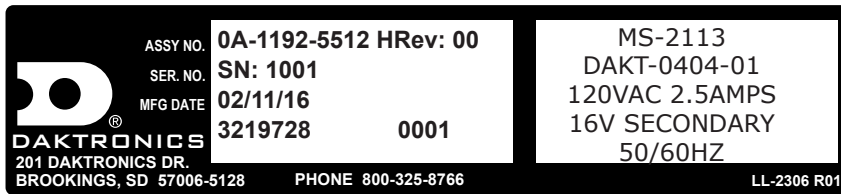
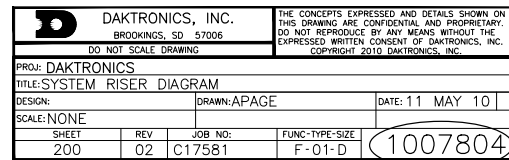


Figure 1: Specifications Label

Please have the assembly number, model number, and the date manufactured on hand when calling Daktronics customer service to ensure the request is serviced as quickly as possible. Knowing the facility name and/or job number will also be helpful.

Resources

Figure 2 illustrates a Daktronics drawing label. This manual refers to drawings by listing the last set of digits. In the example, the drawing would be referred to as **DWG-1007804**. All references to drawing numbers, appendices, figures, or other manuals are presented in bold typeface. Any drawings referenced in a particular section are listed at the beginning of it as shown below:



Drawing Number

Figure 2: Drawing Label

Reference Drawing:

System Riser Diagram **DWG-1007804**

Daktronics identifies manuals by the DD or ED number located on the cover page.

Daktronics Nomenclature

Most display components have a white label that lists the part number (**Figure 3**). Part numbers will also appear on certain drawings. If a component is not found in the **Replacement Parts (p.20)**, use the label to order a replacement. Refer to **Section 7: Daktronics Exchange and Repair & Return Programs (p.21)** if replacing or repairing any display component.

0P-1127-0024
 SN: 2465
 02/19/12 Rev. 1

Figure 3: Part Label

| Main Component Labels | |
|--|--------------|
| Part Type | Part Number |
| Individual circuit board | 0P-XXXX-XXXX |
| Assembly; a collection of circuit boards | 0A-XXXX-XXXX |
| Wire or cable | W-XXXX |
| Fuse | F-XXXX |
| Transformer | T-XXXX |
| Metal part | 0M-XXXXXXX |
| Fabricated metal assembly | 0S-XXXXXX |
| Specially ordered part | PR-XXXXX-X |

| Accessory Labels | |
|---|-------|
| Component | Label |
| Termination block for power or signal cable | TBXX |
| Grounding point | EXX |
| Power or signal jack | JXX |
| Power or signal plug for the opposite jack | PXX |

DAK Score App

On a compatible Android or iOS mobile device, open the App Store, search for "DAK Score", and download the app. With the scoreboard powered on and **Bluetooth®** wireless technology enabled on the mobile device, open the app. The "All Sport MX-1" device should appear in the list. Refer to **Figure 4**. Tap the device name to connect and begin controlling the scoreboard.

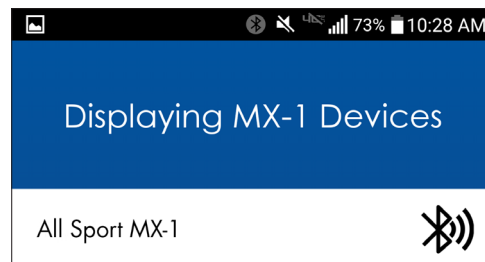


Figure 4: MX-1 Devices in DAK Score App

Note: The MX-1 device name may have been renamed, as is recommended to do if there are multiple scoreboards in the area.

For more setup, operation, and troubleshooting information, visit www.daktronics.com/allsportMXsupport.

Control Consoles

The MS-2113 is designed for use with the battery-powered RC-100/200 handheld controller. The MS-2113 can also be controlled via an All Sport® 1600 or 5000 series control console, which may be equipped with an optional radio transmitter and powered by its own battery pack for an alternate wireless scoring solution. Both controllers use keyboard overlays (sport inserts) to control multiple sports. Refer to the following manuals for operating instructions:

- **All Sport 1600 Series Control Console Operation Manual (ED-12462)**
- **All Sport 5000 Series Control Console Operation Manual (ED-11976)***
- **Remote Control System RC-100 All Sport Operation Manual (ED-15133)**
- **Remote Control System RC-200 All Sport Operation Manual (DD3572889)**

These control console manuals are available online at www.daktronics.com/manuals.

* Primarily used for water polo applications.

Product Safety Approval

Daktronics outdoor scoreboards are ETL-listed, tested to CSA standards, and CE-labeled. Contact Daktronics with any questions regarding testing procedures.

2 Specifications

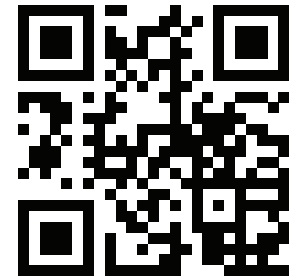
The table below lists all of the mechanical specifications, circuit specifications, and power requirements for the display.

| | |
|---|---|
| Dimensions: Height, Width, Depth | Scoreboard Only: 2'-10" H x 4'-4" W x 8" D (864 mm, 1.32 m, 203 mm) With Cart (minimized for transport/storage): 3'-4" H x 4'-7" W x 2'-6" D (1.02 m, 1.4 m, 762 mm) With Cart (maximized for display operation): 5'-2" H x 4'-7" W x 3'-7" D (1.57 m, 1.4 m, 1.09 m) |
| Weight, including cart | 150 lb (68 kg) |
| Digit Size/Color | 8" (203 mm) / Red |
| Maximum Wattage | 300 W |
| Power | 120 VAC or 24 V Battery |
| Batteries | Lead Acid 2 @ 12 V (each) 28 Amp/Hours |
| Amps per Line - Single Phase | 2.5 A |
| Driver Number (Address) | A1 (11) |

Note: Batteries require 12 hours to fully recharge and can operate for up to 14 hours of normal use.

3 Mechanical Installation

Mechanical installation involves assembly of the cart. The scoreboard itself requires no assembly or permanent installation. Some assembly is required, however, for certain scoreboard options. Scan the QR code at right to view a quick cart assembly video.



youtu.be/G4zcF3RbavQ

Reference Drawings:

| | |
|--|--------------------|
| Mechanical Specifications, MS-2113 | DWG-3270213 |
| Cart Assembly, Portable Display..... | DWG-3274045 |

The display cart (**Figure 5**) comes standard with four wheels. Cart assembly requires the following pieces of hardware:

- T-stands @ 2
- Axle tubes @ 4
- 10" wheels @ 4
- 5/8"-11 x 3" bolts @ 4
- 5/8"-11 nuts @ 4
- 5/16" diameter pins with clips @ 6

A 15/16" wrench is needed to attach the wheels.

Refer to **DWG-3274045** in **Appendix A: Reference Drawings (p.23)** and the following instructions to assemble the cart:

1. Insert the axle tubes into the T-stands, and secure them using pins with retaining clips.
2. Mount the scoreboard by inserting the two T-stands into the larger tube attachments on the sides of the scoreboard, and secure the stands using pins with retaining clips. (The tubes mounted on either side of the scoreboard are permanent attachments; do not remove them during cart disassembly.)
3. Slide a 5/8"-11 x 3" bolt through a wheel, and then screw a 5/8"-11 nut onto the bolt. Attach the bolt/wheel/nut assembly to an axle tube. Tighten the bolt with a 15/16" wrench. Repeat this process for the other wheels. The wheels should be snug in place but still able to freely rotate.

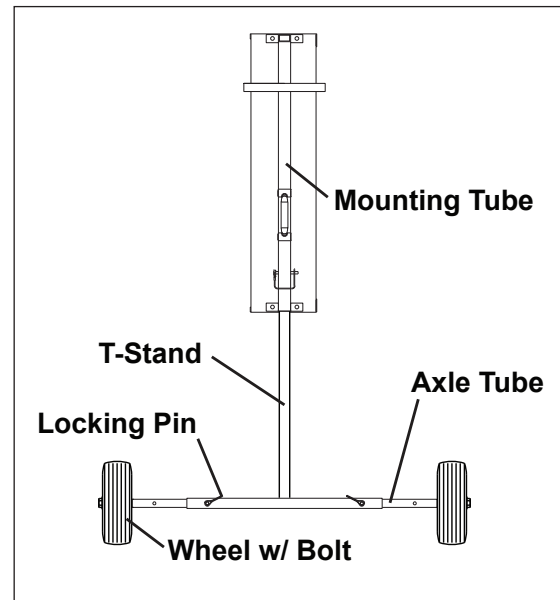


Figure 5: MS-2113 Cart Assembly

Adjusting the Cart

Caution! Do not raise the display in high winds or transport the display in the raised position. These actions increase the likelihood of tipping over and causing injury or damage to the display.

DWG-3270213 in **Appendix A: Reference Drawings (p.23)** shows the two axle positions that may be used with the cart. The extended axle position provides maximum stability and should be used whenever the display is raised. Use the narrow axle position (and lowest height) to move the display through doorways and for storage. The drawing also illustrates front profiles of the display in transport position and at maximum viewing height.

There are three height-adjustment holes in the mounting tubes on the sides of the display. Raise the display for viewing by removing the pins and retaining clips, sliding the display upward on the T-stands and reinserting the pins in the appropriate holes. Lower the display for storage or transportation. It may be helpful to have one person lift the display while another person adjusts the locking pins.

Optional Equipment Installation

Reference Drawings:

| | |
|--------------------------------------|--------------------|
| Ad Panel Installation, MS-2113 | DWG-3274569 |
| Caption Options, MS-2113..... | DWG-3274719 |
| Cover Installation, MS-2113 | DWG-3274720 |

Ad Panel

A custom advertising/school logo panel may be added to the MS-2113. Threaded inserts in the top of the cabinet allow attachment using only three screws. The 12" H x 52" W (305 mm x 1.32 m) aluminum panel runs the full width of the scoreboard. **DWG-3274569** in **Appendix A: Reference Drawings (p.23)** illustrates the ad panel installation.

Caption Kits

The MS-2113 is shipped as a generic multisport scoreboard with a standard clock/score caption arrangement. The face of the scoreboard displays game time, home and guest scoring, and period. Four optional caption kits give the scoreboard added versatility:

- Custom Team Names
- Baseball/Softball Mode
- Segment Timing Mode
- Volleyball Mode

The aluminum caption panels are applied to the scoreboard face with hook-and-loop fastener strips. They can be removed and replaced for various events, leaving the hook strips attached to the face of the scoreboard. Refer to **DWG-3274719** in **Appendix A: Reference Drawings (p.23)** for an illustration of the various caption configurations.

Scoreboard Cover

The aluminum cover protects the MS-2113 during transportation and storage. Flanges on the cover fit into slots on either side of the scoreboard, and the cover simply slides into place using handles on the front. **DWG-3274720** in **Appendix A: Reference Drawings (p.23)** illustrates the cover installation.

Note: If a radio antenna is installed on the face of the scoreboard, remove the antenna before installing or removing the cover. Refer to **Signal (p.8)** for more information about radio installations.

4 Electrical Operation

The display can be powered by two different electrical systems: a standard 120 VAC power source and/or enclosed lead-acid batteries.

Power and Signal Access

The power connection, signal connection, and on/off switch for the MS-2113 are located on the rear of the scoreboard under 3 sealed outlet covers (**Figure 6**). Ensure the covers are closed when the jacks and switch are not in use.

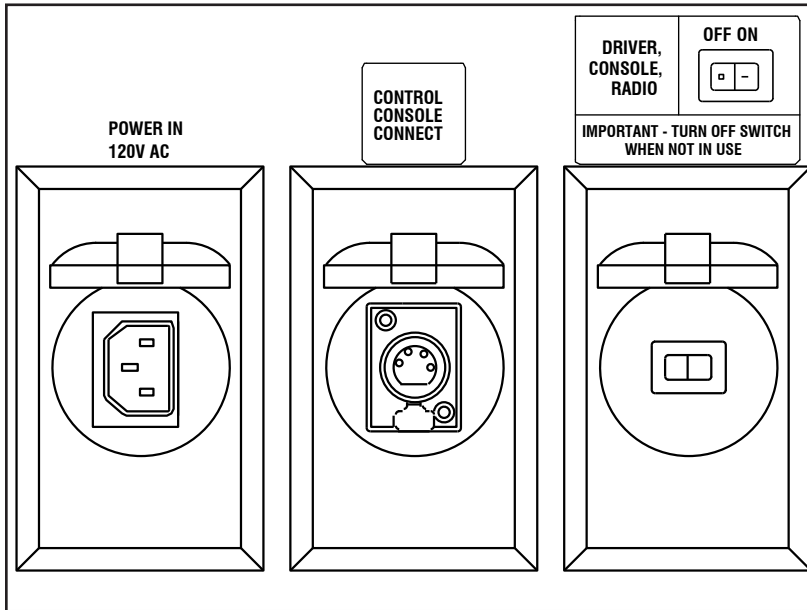


Figure 6: Rear Control Panel with Covers Open

Power

Reference Drawings:

| | |
|--|--------------------|
| Electrical Specifications- MS-2113 | DWG-3275249 |
| Schematic: MS-2113 | DWG-4107359 |
| Schematic; MS-2113, w/ MX-1 | DWG-5303731 |

Power for the display is provided in two ways: via standard 120 VAC line, or by means of two sealed lead-acid DC batteries. Daktronics supplies two 12 V batteries, rated at 28 ampere hours (A/H), as original equipment. Refer to **Section 5: Battery Care and Charging (p.10)** for information on battery care and use of the on-board battery charger.

The provided 8' (2.4 m) 120 VAC power cord plugs directly into the three-prong **POWER IN 120V AC** receptacle, located on the back panel of the display (**Figure 6**). Any time 120 VAC power is connected, the internal charger operates; however, the system will not overcharge the batteries. When the power cord is not connected, the display runs on battery power.

The MS-2113 is shipped ready for use. The battery charger is factory-mounted in the display, and all internal wiring is in place and connected to the driver and batteries.

The **ON/OFF** control switch (**Figure 6**) activates power to the internal display components, as well as to the radio receiver or control console.

- Flip the switch to **ON** for display operation.
- At all other times, keep the switch in the **OFF** position.

Whether or not the display is operational, its batteries will continue to discharge any time the switch is in the **ON** position. **Leaving the switch ON when the display is not in use could completely discharge and damage the batteries.**

Refer to **DWG-3275249** in **Appendix A: Reference Drawings (p.23)** for component locations and illustrations of internal and external wiring. **DWG-4107359** and **DWG-5303731** provide a detailed wiring schematic for advanced troubleshooting.

Keep the display plugged in to a 120 VAC power source during storage. Battery life is enhanced by keeping the batteries fully charged. Typically, batteries will be fully charged in about 12 hours and will give about 14 hours performance on a full charge.

Signal

Reference Drawing:

System Riser Diagrams- MS-2113 **DWG-3274967**

The MS-2113 can receive control signal four different ways as described below. Refer also to **DWG-3274967** in **Appendix A: Reference Drawings (p.23)** for diagrams of each of these control setups.

- **Setup 1:** A wireless RC-100/200 handheld controller communicates with a radio base station installed inside the scoreboard.
- **Setup 2:** A 4-pin cable connects the scoreboard directly to the All Sport. The cable transmits signal to the scoreboard and power to the controller.
- **Setup 3:** A control console equipped with radio transmitter and its own battery pack or a separate power cord communicates with a radio receiver installed inside the scoreboard.
- **Setup 4:** A CUSTOMER-SUPPLIED mobile device or tablet with DAK Score app installed communicates via **Bluetooth®** wireless technology to the MX-1 Interface Box mounted inside the MS-2113.

Connecting Signal Cable

If the display was ordered with a wired control console, simply plug the 4-pin signal cable into the jack labeled **CONTROL CONSOLE CONNECT (Figure 6)**. Attach the mating plug to the modified power cord from the All Sport controller. Extension cables are also available from Daktronics if more cable is needed than the provided 100' (30.5 m).

Base Station and Radio Receiver Installation

Reference Drawing:

Radio Receiver Installation- MS-2113 **DWG-3276286**

The RC-100/200 base station and All Sport radio receiver when ordered as original equipment may already be installed. In this case, the only installation required is attachment of the radio antenna, which may have been shipped separately to prevent damage. If the base station or radio receiver is not already installed, refer to **DWG-3276286** in **Appendix A: Reference Drawings (p.23)**. Refer also to the **MS-2113 Radio Installation Quick Guide (DD4661729)**, shipped with the scoreboard and available online at www.daktronics.com/manuals.

RC-200 Base Station Settings

Reference Drawings:

Base Station: Outdoor Installation **DWG-3640913**

The base station is preset to Function 2, Group 1, Channel 1. When the scoreboard is powered on, it will briefly display the broadcast ("b1") and channel ("C1") numbers in the clock digits. Ensure these numbers match the setting in the RC-200 handheld controller. If the default settings do not appear to work, refer to **DWG-3640913** for instruction on changing the settings. Refer also to the RC-200 manual listed in **Control Consoles (p.2)**.

RC-100 Base Station Settings (Legacy)

Reference Drawings:

Base Station: Outdoor Installation **DWG-236394**

The base station is preset to Function 5, Channel 1. When the scoreboard is powered on, it will briefly display the base station channel number ("C 01") in the clock digits. Ensure the channel number matches the setting in the RC-100 handheld controller. If the default settings do not appear to work, refer to **DWG-236394** for instruction on changing the settings. Refer also to the RC-100 manual listed in **Control Consoles (p.2)**.

Radio Receiver Settings

Reference Drawing:

Installation Drawing; Outdoor Scbd Gen VI Radio Receiver **DWG-1109181**

The radio receiver is preset to Broadcast Group 1, Channel 1. When the scoreboard is powered on, it will briefly display the broadcast ("b1") and channel ("C1") numbers in the clock digits. Ensure these numbers match the settings in the All Sport control console. If the default settings do not appear to work, refer to **DWG-1109181** for instruction on changing the settings. Refer also to the All Sport manual listed in **Control Consoles (p.2)**.

Note: If there are other All Sport controlled displays in the area operating with radio signal, each display receiver must be set to a different channel number (typically starting with 1 and numbering consecutively).

If the radio receiver channel and broadcast settings do match those set in the console but the console does not control the display, there may be radio interference. In this case, change the settings of the wireless radio receiver inside the scoreboard and in the console as described in the radio control manuals.

For more information, refer to the **Gen VI Radio Installation Manual (DD2362277)**, provided with the receiver unit and available online at www.daktronics.com/manuals.

MX-1 and DAK Score

Reference Drawing:

MX-1 Installation Options on MS-2113 **DWG-4107389**

- For scoreboards built after June 2024, the MX-1 Interface Box will come installed internally from the factory. Refer to www.daktronics.com/allsportMXsupport.
- For scoreboards built prior to June 2024, refer to **DWG-4107389** for MX-1 Interface Box installation options. Refer also to the **MS-2113 Radio Installation Quick Guide (DD4661729)**, originally shipped with the scoreboard and available online at www.daktronics.com/manuals.

5 Battery Care and Charging

This section describes care and operation of the on-board battery charging system.

On-Board Charger

Reference Drawing:

Electrical Specifications- MS-2113 **DWG-3275249**

On a full charge, the two internal batteries provide enough power for approximately 14 hours of normal operation. Keeping the batteries charged will help extend their life. Ensure the batteries are fully charged before storing the display during the off-season; storing the display with a discharged battery can contribute to early battery failure. Keep the display plugged in to a 120 VAC receptacle during storage.

The Marincó ChargePro model 28210 on-board battery charger is designed both to recharge the batteries of the displays and to extend battery life in applications where display and batteries are stored for long periods of time. The charger is located in the cabinet interior, attached to the right wall (as viewed with the rear access panel open). The charger is connected to the transformer, next to the driver enclosure, and to the batteries. Refer to **DWG-3275249** in **Appendix A: Reference Drawings (p.23)**.

| Charger Power Specifications |
|--|
| Outputs: two individual isolated outputs with a combined rating as follows: <ul style="list-style-type: none">• When bulk charging: 8–10.5 A at 14.3 VDC• When absorption charging: 3–10 A at 14.3 VDC• When float charging: 0–3 A at 13.3 VDC |
| Maximum recommended battery size: <ul style="list-style-type: none">• For recharging: Up to 120 A/H |
| Input: <ul style="list-style-type: none">• Rated AC voltage: 100–240 VAC, 50–60 Hz• Current draw: 2.5 A at full output |

The ChargePro 28210 charger (**Figure 7**), is a 2 bank, 10 A, 12/24 VDC output charger with a wide input range of 100-240 VAC. It is microprocessor controlled and has a maintenance mode that will keep the batteries fully charged. The charger is fully automatic and can be connected to the twin 12 V lead-acid batteries indefinitely without risk of overcharging. The 28 A/H batteries provided with the display will typically be fully recharged after about 12 hours.

The ChargePro 28210 charger is a four-stage smart charger with Sense Send technology that senses the power needs of each battery and sends the correct charge regardless of Serial or Parallel output connections. If the batteries have discharged unequally, the charger will send more power to the battery that needs it, resulting in faster charging.



Figure 7: ChargePro Charger

The charge cycle is as follows:




1. **Soft Start** – Charger verifies connections are good and the battery is capable of accepting a charge. Batteries with very low voltage (near dead) will be slowly charged to not harm the battery. When the battery voltage reaches 10 V for 30 seconds, the charger switches to the next stage.
2. **Bulk Stage** – the charger uses constant current and charges the battery to 14.3 V. When the battery holds the voltage of 14.3 V for 30 seconds, the charger switches to the next stage.
3. **Absorption Stage** – the charger uses constant voltage to charge the battery until the charge current drops just below the rated current for 30 seconds. At this point the charger will go to the next stage.
4. **Float Stage** – the charger finishes the charge cycle by keeping the battery at 13.3 V for a period of time and determines the battery is charged and shuts down.
5. **Maintenance** – the charger will monitor the battery and if the battery voltage drops below 12.8 V or if 14 days have passed since the last charge the charge cycle will start automatically.

Unlike most automotive "trickle" chargers, the unit will not boil off the electrolyte in a lead-acid battery when left unattended.

To operate the charger, simply plug the display's power cord into a standard 120 VAC, 60 Hz outlet. Red and green LED indicators on the charger, visible through holes on the left side of the display cabinet, indicate the recharging status. A label on the rear of the cabinet also describes charging levels.

Note: When the batteries are connected, they will continuously supply power, even if the digits are blank. Make sure that the display is powered **ON** only during an event or when testing. At all other times, the display should be powered **OFF**.

The table below describes how the charger indicators operate:

| LED Indicators | Operating Condition |
|--|--|
| Soft Start / Bulk Charge  | Charger is in the "Soft Start" or "Bulk Stage" and the battery is being charged. If the red LED stays on for more than 24 hours, refer to the Charger Troubleshooting Table (p.12) . |
| Absorption Charge  | Charger is in the "Absorption Stage" and delivering constant voltage to the battery. If both LEDs stay on longer than 24 hours, refer to the Charger Troubleshooting Table (p.12) . |
| Float Charge  | The charger has moved to the "Float Stage" and is topping off the charge to the battery and keeping the battery ready to use. The green light indicates your battery is ready to use. If the green LED stays on and the battery is known to be low, refer to the Charger Troubleshooting Table (p.12) . |
| Maintenance | The charger will monitor the battery, and if the battery voltage drops below 12.8 V for 30 seconds or if 14 days have passed since the last charge, the charge cycle will start automatically and will switch back to "Bulk Stage". |

Operation

If the ChargePro encounters a DC overload (excessive demand), it will reduce its output voltage to a safe level to prevent damage. If the positive and negative connectors are touched together, creating a short, the charger will instantly reduce its output voltage to nearly 0 V. When the overload is removed, the charger automatically resumes normal operation.

If the in-line 10 A, 32 VDC fuse in either cable blows due to improper connection to a battery, replace the fuse with an identical 10 A fuse only (Daktronics part # F-1006). Never replace a blown fuse with a higher-value fuse.

The charger is waterproof, but the AC plug and DC bolt-type connectors should be kept dry. It is normal for the charger to become warm during operation; consequently, it should not contact any surface other than the display cabinet.

Charger Troubleshooting Table

| Problem | Cause | Solution |
|--|---|---|
| It seems to take a long time to recharge the batteries in hot weather. | The charger has overheated due to poor air circulation and has reduced its output. | Consider moving the display to a shaded location. |
| Red LED stays on for more than 24 hours. | One or more defective or damaged cells | Load test the battery and replace if necessary. See Replacing Batteries (p.19) . |
| | Charger has reduced its output voltage below the normal level due to a DC overload or a DC short. | Remove the source of the overload or short. Disconnect the charger's black (negative) terminal from the battery. Reapply AC power and only the green LED should light up. |
| | Extremely low AC voltage at the battery charger | Apply a higher AC voltage source or reduce the length of the extension cord. |
| Check battery manufacturer's specs on battery charging. | | |
| Both the red and green LEDs stay on for more than 24 hours. | On-board DC systems are drawing between 1.5 – 3.5 A. | Turn off all DC equipment while charging. |
| | One or more defective or damaged cells. | Load test the battery and replace if necessary. See Replacing Batteries (p.19) . |
| | Extremely low AC voltage at the battery charger | Apply a higher AC voltage source or reduce the length of the extension cord. |
| Check battery manufacturer's specs on battery charging. | | |

| Problem | Cause | Solution |
|--|--|---|
| Green LED stays on when the battery is known to be low. | Open DC output fuse. | Replace DC output fuse with a 10 amp fuse. |
| | Faulty or contaminated terminal connections. | Clean and tighten or repair all terminal connections. |
| | One or more defective or damaged cells. | Load test the battery and replace if necessary. See Replacing Batteries (p.19) . |
| Neither of the LEDs turn on when the AC power is applied | No AC power available at the charger | Connect AC power or reset the AC breaker on the main panel |
| | Component failure | Go to www.marinco.com – under the Resources tab, refer to FAQ section. |

Radio Interference

The on-board battery charger generates and can radiate radio frequency energy. The equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to FCC rules, Part 15.

With proper installation, there should be no interference with any radio communications, either with the display's own receiver or other radio-controlled devices in the immediate area. However, if it is determined that this device may be the cause of radio interference, try to correct the interference with one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an AC outlet on a circuit different from the receiver.

Battery and Charging Safety

Note: The following lists are general safety instructions when working with lead-acid batteries. Some of the safety considerations are not applicable to the sealed batteries provided with the display as those batteries are self-contained and cannot be opened, and they are safer than automotive batteries that require servicing. Exercise caution, however, when working with any lead-acid battery.

Personal Safety Precautions

- Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
- Have plenty of fresh water and soap nearby in case battery acid contacts your skin, clothing, or eyes.
- Wear complete eye protection and clothing protection. Avoid touching your eyes while working near the battery.
- If battery acid does contact skin or clothing, wash immediately with soap and water. If you get acid in your eye, immediately flood the eye with running cold water for at least 10 minutes, and get medical attention immediately.
- NEVER smoke or allow a spark or flame near the battery.

- Be extra cautious while servicing the display to reduce the risk of dropping a tool onto the battery. It might spark or short-circuit the battery or another electrical part, which could cause an explosion.
- Remove all personal metal items such as rings, watches, and other jewelry when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or similar item to metal, causing severe burns.
- Use the charger for charging LEAD-ACID batteries only. It is not intended to recharge common dry cell batteries, which may burst and cause injury to people and damage to property.
- NEVER charge a frozen battery.

DC Connection Precautions

1. Check the polarity markings on the battery.
2. Attach the positive ring terminals (red or white wires with fuse) from each cable on the charger to the positive (+) terminals of the batteries.
3. Attach the negative ring terminals (black wires) from each cable on the charger to the negative (-) terminals of the batteries.
4. When disconnecting the charger, first disconnect (unplug) the AC power cord, then remove the negative ring terminal from the battery's negative (-) terminal, and remove the positive (+) ring terminals last.

6 Troubleshooting

Disconnect power before doing any repair or maintenance work on the display. Permit only qualified service personnel to access internal display electronics. Disconnect power when not using the display.

Troubleshooting Table

The table below lists potential problems with the display and indicates possible causes and corrective actions. This list does not include every symptom that may be encountered, but it does present several of the most common situations that may occur.

| Problem | Possible Cause | Solution/Items to Check |
|---|--------------------------------------|---|
| Display doesn't light, and console doesn't work | No power to the display | Flip power switch ON . |
| | | Check that the display has 120 VAC power. |
| | | There may be a problem with the batteries/charger. Refer to the Charger Troubleshooting Table (p.12) . |
| | No power to console | Ensure the console is plugged into the 4-pin jack labeled CONTROL CONSOLE CONNECT or a 120 VAC power supply. Exchange the console with a working one, and enter the correct sport code and/or radio settings to test. Replace if necessary. |
| Display digits do not light, but console works | No wired signal from control console | Check that the display is receiving 120 VAC or battery power. |
| | | Check that the red DS5 LED on the driver lights up when sending commands from the control console. See LED Driver (p.18) . |
| | No radio signal from control console | Check the receiver (display) and transmitter (console) radio settings. See Signal (p.8) . |
| | | Check that the green POWER and amber RADIO IN RANGE indicators on the radio receiver in the display light up when the control console is powered on. Keep the console 20–1500' (6–457 m) away. |
| | | Move the console 20–30' (6–9 m) from the display and test again. Verify that both the console and display antennas are securely tightened and in a vertical position. Replace the radio receiver. |
| | No signal to driver | Check that the display is receiving 120 VAC or battery power. |
| | | Check that the red DS5 LED on the driver lights up when sending commands from the control console. See LED Driver (p.18) . |
| | | Exchange driver with a working one of the same part # to verify the problem. Replace if necessary. See LED Driver (p.18) . |
| | No power to driver | Check that the red DS8 LED on the driver is always lit up when the display is powered on. See LED Driver (p.18) . |

| Problem | Possible Cause | Solution/Items to Check |
|---|--------------------------------------|--|
| Display does not run on 120 VAC power | Blown fuse | Check fuse in fuse holder labeled F5. If blown, replace with Daktronics part # F-1077. |
| Display digits light, but not in the correct order | Incorrect sport code | Ensure the correct sport code is being used for the display model. Refer to the appropriate console operation manual. |
| | Incorrect driver address | Check that the display driver is set to the correct address. See Setting the Driver Address (p.19) . |
| Digits light, console works, but nothing displays | No wired signal from control console | (see solution on previous page) |
| | No radio signal from control console | (see solution on previous page) |
| | Bad/damaged field wiring | Check that the red DS5 LED on the driver lights up when sending commands from the control console. See LED Driver (p.18) . |
| Display works, but some LEDs always stay on | Short in digit circuit | Exchange the digit with a working one of the same part # to verify the problem. Replace if necessary. See Replacing Digits (p.17) . |
| Display works, but some LEDs do not light or they blink | Bad connection | Verify the connector on the back of the digit circuit board is secure. See Replacing Digits (p.17) . |
| | Bad digit or driver | Exchange the digit or driver with a working one of the same part # to verify the problem. Replace if necessary. See Replacing Digits (p.17) for digits or LED Driver (p.18) for drivers. |
| Display works, but some digits do not light | Bad digit or driver | (see solution above) |
| | Incorrect sport code | (see solution above) |
| | Incorrect driver address | (see solution above) |
| | Wrong console controlling display | Another console's radio signal may be transmitting to the scoreboard. For example, a football and baseball scoreboard that are within 1500' (457 m) of each other. |
| | Radio Interference | There may be other radio transmissions in the area that overpower the console. If it is not possible to disable the interfering device, it may be necessary to run a wired signal connection instead. |

Component Locations and Access

Reference Drawing:

Electrical Specifications- MS-2113 **DWG-3275249**

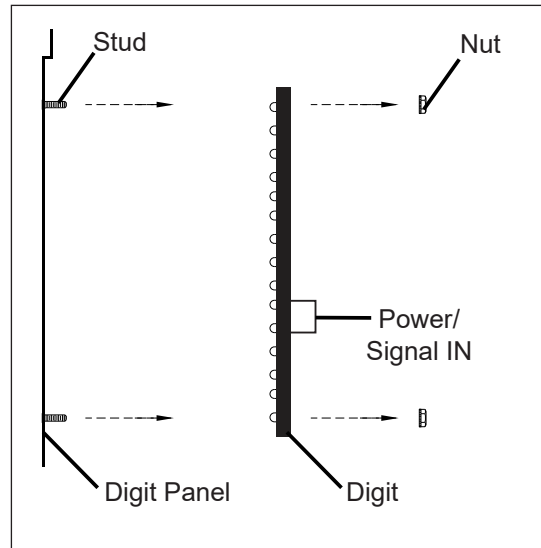
In the MS-2113, the entire back panel is hinged on the right side (as viewed from the rear). The left-rear side of the display has 3 slotted latches securing the access panel. To access the internal scoreboard components, use a flathead screwdriver to turn all 3 latches 1/2 twist counterclockwise and swing the access panel open. **DWG-3275249** in **Appendix A: Reference Drawings (p.23)** illustrates the back panel open and all of the internal components exposed.

Note: Disconnect power before servicing the display! Also turn power **OFF** when the display is not in use. In addition to discharging the batteries, prolonged power-on may shorten the life of some electronic components.

Replacing Digits

LEDs are embedded in a circuit board that is mounted to a black polycarbonate tray and encased in protective gel. This weather-sealed digit tray is mounted to the back of a digit panel as shown in **Figure 8**. Multiple digits may be secured to a single face panel. Do not attempt to remove individual LEDs; in the case of a malfunctioning LED or digit segment, replace the entire digit. To replace a digit:

1. Open the back panel as described in **Component Locations and Access (p.17)**.
2. Disconnect the 9-pin plug from the back of the digit by squeezing the locking tabs together while pulling the connector free.
3. Use a 9/32" nut driver to remove the nuts securing the digit to the inside of the panel, **Figure 8: Weather-Sealed Digit Panel Assembly** and then lift the digit off the standoff studs.
4. Position a new digit over the studs, and tighten the nuts.
5. Reconnect the 9-pin plug. This is a keyed connector and it will attach in one way only. Do not force the connection.
6. Close and secure the back panel, then power up and test the display to verify the issue has been resolved.



Segmentation and Digit Designation

Reference Drawings:

Segmentation- 7 Segment Bar Digit **DWG-38532**
Electrical Specifications- MS-2113 **DWG-3275249**

In each digit, certain LEDs always go on and off together. These groups of LEDs are called segments. **DWG-38532** in **Appendix A: Reference Drawings (p.23)** details which connector pin is wired to each digit segment and the wiring color code used throughout the display. **DWG-3275249** indicates the driver connectors controlling the digits. The numbers shown in the upper half of a digit indicate which driver connector is wired to it.

LED Driver

Reference Drawings:

| | |
|---|--------------------|
| Specifications; Gyrus LED Driver, 16 Col..... | DWG-3071833 |
| Electrical Specifications- MS-2113 | DWG-3275249 |
| Schematic: MS-2113..... | DWG-4107359 |
| Schematic; MS-2113, w/ MX-1..... | DWG-5303731 |

The LED driver performs the task of switching digits on and off within the display. LED drivers are located inside of a driver enclosure. Refer to **DWG-3275249** to view the location and components of the driver enclosure. Refer to **DWG-4107359** or **DWG-5303731** for detailed wiring schematics.

When troubleshooting driver problems, four red LEDs labeled **DS1**, **DS2**, **DS5**, and **DS8** provide diagnostic information as shown in the table below.

Note: While it is necessary to have the display powered on to check the LED indicators, always turn off display power before servicing.

| LED | Function | Operation | Summary |
|-----|---------------------|--------------------|--|
| DS1 | Radio/ RS-232 RX | Blinking or off | DS1 will be blinking when the driver is receiving radio signal and off when there is no signal. |
| DS2 | Status | Blinking | DS2 will be blinking at one second intervals to indicate the driver is running. |
| DS5 | Signal RX | Blinking or off | DS5 will be blinking when the driver is receiving current loop signal and off when there is no signal. |
| DS8 | Power | Steady on | DS8 will be on and steady to indicate driver has power. |

For detailed descriptions and pin-outs of the driver jacks, refer to **DWG-3071833**.

Replacing a Driver

If the driver status indicators do not appear to be working correctly, it may be necessary to replace the driver.

1. Open the back panel as described in **Component Locations and Access (p.17)**.
2. Remove the metal cover of the driver enclosure by lifting it up, then back and down to expose the driver components.
3. Disconnect all plugs from the driver by squeezing the locking tabs together and pulling the connectors free. It may be helpful to label the cables to know which plug goes to which jack when connecting the replacement driver.
4. Remove the nuts securing the driver to the inside of the enclosure.
5. Carefully lift the driver from the display and place it on a clean, flat surface.
6. Position a new driver over the screws and tighten the nuts.
7. Reconnect all plugs to their mating jacks on the driver. The connectors are keyed and will attach in one way only. **Do not force the connections.**
8. Ensure the new driver is set to the correct address. This will be the same address of the old driver being replaced. Refer to **Setting the Driver Address (p.19)**.
9. Put the metal cover back on the enclosure, securely close the back panel, and then power up and test the display to verify the issue has been resolved.

Setting the Driver Address

Reference Drawings:

Address Table; Rotary Switches H and L **DWG-1198765**

Since the same LED drivers can be used for many display models, each driver must be set to receive the correct signal input, or address, for the model being used.

Addresses are set through the S2 (L) and S3 (H) rotary switches on the driver (**Figure 9**) using a small flathead screwdriver.

The MS-2113 will always be set to address **11**, where H = 0 and L = B.

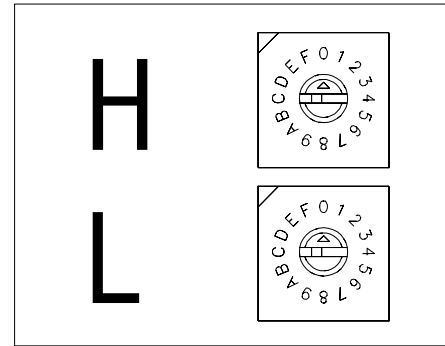


Figure 9: Driver Address Dials

Replacing Batteries

Reference Drawing:

Battery Service- MS-2113..... **DWG-3276260**

As the batteries age, they may lose capacity to sufficiently operate the display, even on a full charge. When replacement becomes necessary, use the same brand of battery as the original equipment. Similar batteries may be used as long as they meet the specifications for the display. If a different brand must be used, be sure that the terminals are oriented the same as in the original to ensure a proper connection. Refer to **Replacement Parts (p.20)** for part numbers of batteries and fuses.

DWG-3276260 in **Appendix A: Reference Drawings (p.23)** illustrates battery service. Mounting brackets hold the batteries in place at the bottom of the display. The bracket is designed to hold batteries measuring 7" high, 6.5" wide, and 5" deep (178 mm, 165 mm, 127 mm). The bracket is not designed to support a battery of different dimensions.

To replace the batteries:

1. Open the back panel as described in **Component Locations and Access (p.17)**.
2. Use a 3/8" socket or nut driver to unfasten the four nuts securing each battery bracket to the display studs and remove the brackets.
3. Remove the screws securing the wires to the battery terminals. Disconnect the negative (-) terminal first followed by the positive (+) terminal.
4. Remove the battery from the display.
5. Reverse the procedure to install new batteries. Connect the positive (+) terminal first followed by the negative (-) terminal.

Important Notes:

- During service, do not allow the battery terminals to touch any metal surface. When reinstalling, make sure the terminal wires are connected correctly. Improper connection may result in injury or damage to display components.
- The batteries in these products contain lead. Do not dispose of the batteries in a municipal waste system at the end of their useful life. Doing so may be a violation of local, state, or federal environmental regulations. Please return the batteries to a battery recycling center or battery retailer.

Horn

Reference Drawing:

Electrical Specifications- MS-2113 **DWG-3275249**

A 12 V buzzer horn is mounted in the upper-left corner of the front face panel (as viewed from the front). **DWG-3275249** in **Appendix A: Reference Drawings (p.23)** shows the horn location from the front as well as when accessing internal components from the rear. To replace a horn:

1. Open the back panel as described in **Component Locations and Access (p.17)**.
2. Disconnect the 2-pin cable from the horn.
3. Use a 7/16" wrench to remove the nut securing the horn to the horn mounting bracket.
4. Reattach the new horn to the front face panel.
5. Connect the new 2-pin horn cable.
6. Close and secure the back panel, then power up the display and test the horn to verify the issue has been resolved.

Note: The horn volume is set at maximum during manufacturing and is not adjustable.

Replacement Parts

The following table contains display components that may require replacement. Many of the other components will have attached part number labels.

| Description | Part Number |
|---|--------------|
| 12 VDC Horn Assembly | 0A-1072-0023 |
| 16 Column Digit Driver | 0A-1782-0100 |
| 8" Digit, Red, 7 segment | 0A-1988-5403 |
| Y-Harness; Scoreboard to MX-1 Interface Box | 0A-2026-0006 |
| Battery Monitor (Circuit Board) | 0P-1192-0097 |
| Battery; 12V, 28 A/H sealed lead-acid (Power Sonic Model PS12280) | BT-1023 |
| Battery Charger; dual 12/24V DC, 10 A (ChargePro Model 28210) | BT-1053 |
| Fuse, AGC-10, 10A, 250 V, glass tube | F-1006 |
| Fuse, MDL-1, 250V, glass tube | F-1077 |
| Washer, 5/8" flat | HC-1846 |
| Wheel Bolt, 5/8 -11 x 4" | HC-3223756 |
| Locking Pin | HS-1207 |
| Wheel, 10" x 3.5", 5/8" axle | RA-3223755 |
| Transformer, Pri; Dual 115/230V; sec: 16VCT @6.25A | T-1066 |
| Power cord, 360° rotating, 8' | W-1181 |
| 4-Pin Female XLR to 6-pin adapter for MX-1 Interface Box | W-5294352 |
| Fuse holder | X-1287 |

Refer to **Section 7: Daktronics Exchange and Repair & Return Programs (p.21)** for information on exchanging or returning parts.

7 Daktronics Exchange and Repair & Return Programs

Exchange Program

The Daktronics Exchange Program is a service for quickly replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before contacting Daktronics, identify these important numbers:

Display Serial Number: _____

Display Model Number: _____

Job/Contract Number: _____

Date Manufactured/Installed: _____

Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps:

1. Call Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

2. When the new exchange part is received, mail the old part to Daktronics.

If the replacement part fixes the problem, send in the problem part being replaced.

- a. Package the old part in the same shipping materials in which the replacement part arrived.
- b. Fill out and attach the enclosed UPS shipping document.
- c. Ship the part to Daktronics.

3. The defective or unused parts must be returned to Daktronics within 5 weeks of initial order shipment.

If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part. Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. Call Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

2. Receive a case number before shipping.

This expedites repair of the part.

3. Package and pad the item carefully to prevent damage during shipment.

Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend using packing peanuts when shipping.

4. Enclose:

- name
- address
- phone number
- the case number
- a clear description of symptoms

5. Ship to:

Daktronics Customer Service

[Case #]

201 Daktronics Drive, Dock E

Brookings, SD 57006

Daktronics Warranty & Limitation of Liability

The Daktronics Warranty & Limitation of Liability is located at the end of this manual. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

A Reference Drawings

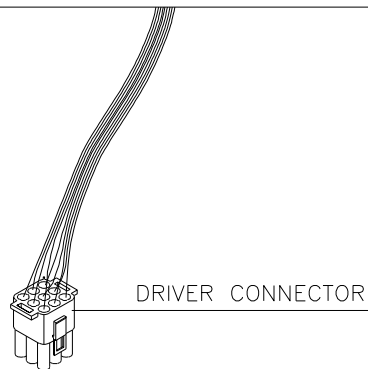
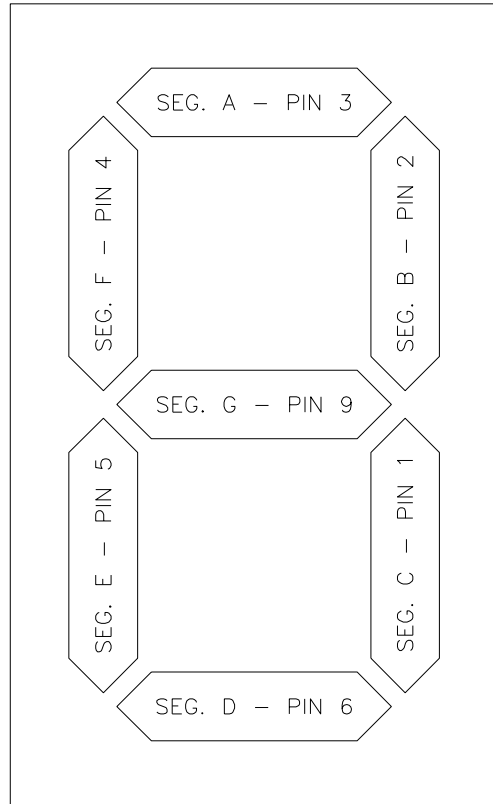
Refer to **Resources (p.1)** for information regarding how to read the drawing number. Any contract-specific drawings take precedence over the general drawings.

Reference Drawings:

| | |
|--|--------------------|
| Segmentation- 7 Segment Bar Digit | DWG-38532 |
| Base Station: Outdoor Installation | DWG-236394 |
| Installation Drawing; Outdoor Scbd Gen VI Radio Receiver | DWG-1109181 |
| Specifications; GyruS LED Driver, 16 Col..... | DWG-3071833 |
| Mechanical Specifications, MS-2113 | DWG-3270213 |
| Cart Assembly, Portable Display..... | DWG-3274045 |
| Ad Panel Installation, MS-2113 | DWG-3274569 |
| Caption Options, MS-2113..... | DWG-3274719 |
| Cover Installation, MS-2113 | DWG-3274720 |
| System Riser Diagrams- MS-2113..... | DWG-3274967 |
| Electrical Specifications- MS-2113 | DWG-3275249 |
| Battery Service- MS-2113..... | DWG-3276260 |
| Radio Receiver Installation- MS-2113 | DWG-3276286 |
| Base Station: Outdoor Installation | DWG-3640913 |
| Schematic: MS-2113..... | DWG-4107359 |
| MX-1 Installation Options on MS-2113 | DWG-4107389 |
| Schematic; MS-2113, w/ MX-1..... | DWG-5303731 |

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7 SEGMENT BAR DIGIT
FRONT VIEW



DRIVER CONNECTOR

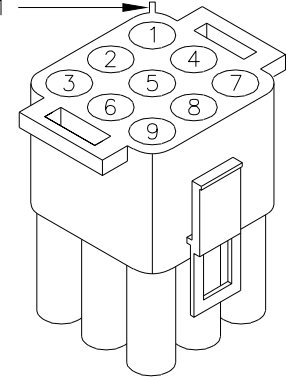
EFFECTIVE APRIL 2021
ALL WIRE COLORS CHANGED
TO BLACK

| COLOR CODE | | |
|------------|------------|----------------|
| PIN NO. | WIRE COLOR | DRIVER SEGMENT |
| 1 | ORN | C |
| 2 | RED | B |
| 3 | BRN | A |
| 4 | BLU | F |
| 5 | PNK | E |
| 6 | TAN | D |
| 7 | BLK | COM. |
| 8 | GRY | H |
| 9 | VIO | G |

NOTE: "H" SEGMENT, GRAY WIRE IS NOT USED ON 7 SEGMENT BAR DIGIT.

CONNECTOR PIN NUMBERING

NOTE SPLINE NEAR NO. 1



| | | | |
|--|---------------------------------|--|----------------------------|
| REV 03 | DATE: 20 APR 21 | CN18578 ADDED NOTE TO CALL OUT CHANGE OF WIRE COLOR TO BLACK EFFECTIVE APRIL 2021. | BY: JSF |
| | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2021 DAKTRONICS, INC. (USA) | THIRD ANGLE PROJECTION |
| PROJECT: BASKETBALL | | | |
| TITLE: SEGMENTATION- 7 SEGMENT BAR DIGIT | | | |
| DATE: 05 JUN 89 | DIM UNITS: INCHES [MILLIMETERS] | | SHEET |
| SCALE: 1=4 | DO NOT SCALE DRAWING | | REV |
| DESIGN: AVB | JOB NO. | FUNC - TYPE - SIZE | 03 |
| DRAWN: HEIDERSCHIEDT P1192 | - | - A | 38532 |

| | | | | |
|---|-----------|---|--------|-----|
| 2 | 30 APR 97 | ADDED SEGMENT DESIGNATIONS TO DIGIT FIGURE. | AVB | AVB |
| 1 | 2 JAN 92 | CHANGED FROM B-SIZE TO A-SIZE DWG. | C FICK | |

TOP VIEW
BASE STATION VIEW WITH FUNCTION SETTINGS CHART

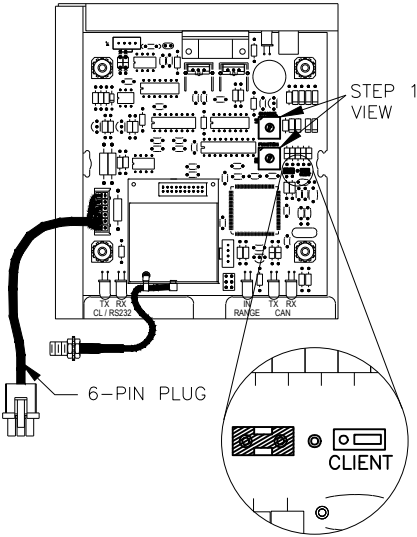
STEP 1
 USING A SMALL FLAT HEAD SCREW DRIVER OR YOUR FINGERS CHANGE THE SWITCHES TO THE DESIRED CHANNEL AND FUNCTION NUMBER. (REFER TO STEP 1 VIEW AND CHART FOR CHANNEL SELECTION.)

STEP 2
 NOTE THE CHANNEL NUMBER SET FOR THIS UNIT.

STEP 3
 BASE STATION IS SET IN FACTORY FOR SERVER MODE. FOR CLIENT MODE, SET JUMPERS TO RIGHT MOST POSITION.

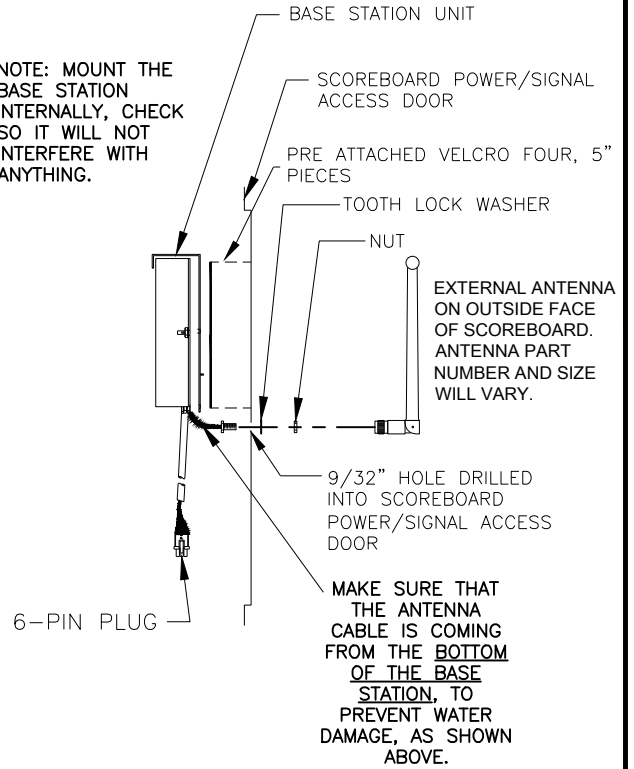
STEP 1 CHART

| FUNCTION SETTING | FUNCTION (SERVER MODE) |
|------------------|---|
| 0 | DEFAULT FUNCTION (LAST POWER UP FUNCTION) |
| 1 | CAN HANDHELD JUDGES CONSOLE |
| 2 | ALL SPORT SCBD CONTROLLER - GEN I |
| 3 | DATA TIME MASTER DISPLAY CONTROLLER |
| 5 | ALL SPORT SCBD CONTROLLER - GEN II |
| F | RESET MEMORY/TEST |
| 4, 6-E | RESERVED |



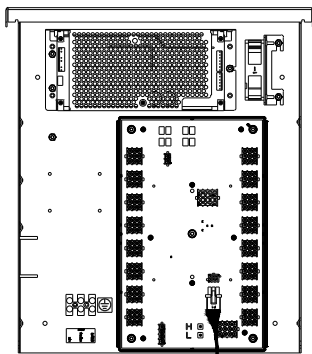
SIDE VIEW
BASE STATION MOUNTING DETAILS FOR MOST OUTDOOR SCOREBOARDS

NOTE: MOUNT THE BASE STATION INTERNALLY, CHECK SO IT WILL NOT INTERFERE WITH ANYTHING.



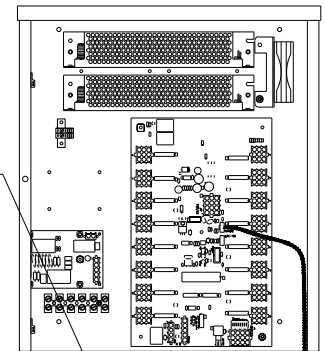
CONNECTING THE BASE STATION WIRE HARNESS
FRONT VIEW OF DRIVER ENCLOSURE; LID REMOVED

GYRUS VIEW

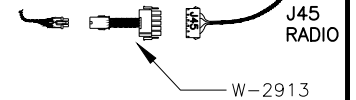



PLUG THE 6-PIN MALE PLUG FROM THE BASE STATION INTO THE MATING 6-PIN JACK (J21) ON THE DRIVER PCB AS SHOWN.

LEGACY VIEW



PLUG THE 6-PIN MALE PLUG FROM THE BASE STATION INTO THE MATING 6-PIN JACK OF THE ADAPTOR HARNESS (W-2913).
 PLUG THE MALE 5-PIN END OF THE ADAPTER HARNESS INTO THE MATING 5-PIN CONNECTOR (J45) COMING FROM THE DRIVER.



| | | | | | | |
|--|------------|--|-----|----------------|-------------|-----------------|
|  DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2011 DAKTRONICS, INC. | | | | |
| | | PROJ:RC-100 TITLE:BASE STATION: OUTDOOR INSTALLATION | | | | |
| 03 | 18 FEB 15 | REMOVED "BEFORE JAN 2007" VIEW ADDED NEW GYRUS VIEW UPDATED BASE STATION VIEWS | BJG | DESIGN:MMILLER | DRAWN:APAGE | DATE: 11 MAR 05 |
| 02 | 23 AUG 11 | ADDED NEW DETAIL TO DRAWING UPDATED TITLE BLOCK AND FUNCTION CHART | JJL | SCALE: 1 = 7 | | |
| 01 | 18 JUNE 08 | ADDED STEP 1.4 AND DETAIL | AMG | SHEET | REV | JOB NO: |
| | | | | 03 | P1110 | FUNC-TYPE-SIZE |
| | | | | | | E-07-A |
| | | | | | | 236394 |

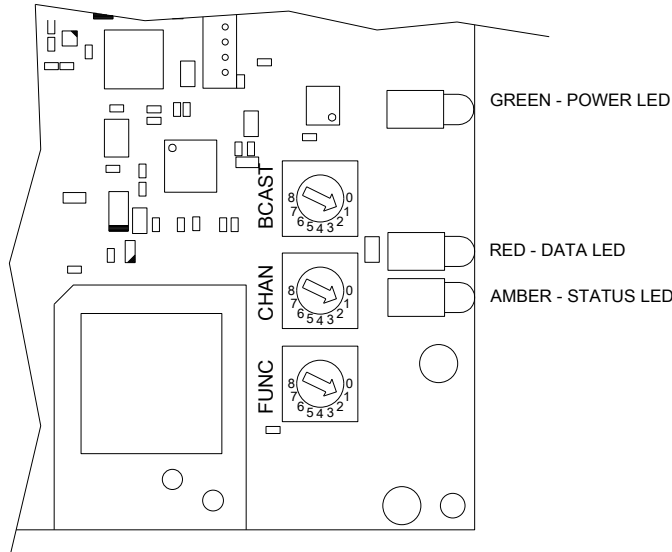
OUTDOOR SCOREBOARDS ONLY

RADIO PREPARATION

- RADIO SETTING FROM FACTORY IS F=1, B=1, C=1. IF THIS SETTING IS FINE FOR YOUR FACILITY LAYOUT, INSTALL RADIO INTO DISPLAY.

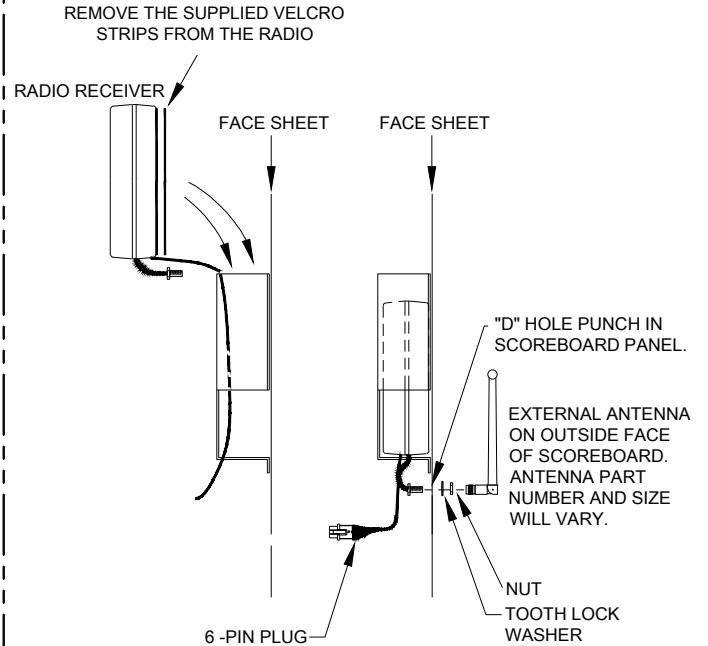
OR

OPEN RADIO CASE BY REMOVING 4 PHILIPS HEAD SCREWS. ALWAYS LEAVE FUNCTION = 1, BUT CHANGE THE CHANNEL AND BCASD DIALS AS NEEDED. USE SMALL FLAT HEAD SCREW DRIVER.



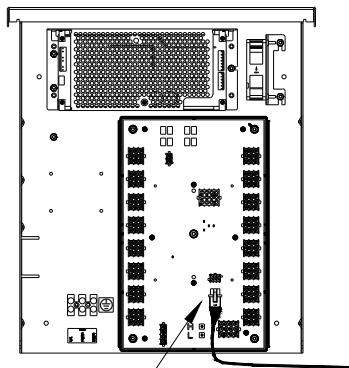
MOUNTING RADIO RECEIVER IN MOST OUTDOOR SCOREBOARDS.

NEAR THE PRIMARY DRIVER ENCLOSURE WILL BE A RADIO BRACKET BOLTED TO A FACE SHEET. THIS POCKET WILL HOLD THE RADIO RECEIVER AND ALLOW YOU TO ROUTE THE CABLING DOWN AND OVER TO THE DRIVER ENCLOSURE.



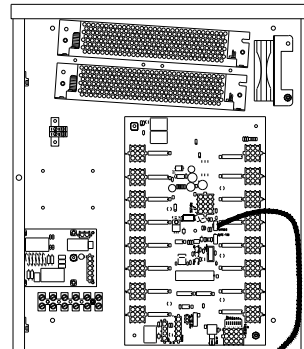
PRIMARY DRIVER ENCLOSURE, LOCATION VARIES PER SCOREBOARD MODEL.

GYRUS VIEW



PLUG THE 6-PIN MALE PLUG FROM THE RADIO RECEIVER INTO THE MATING 6-PIN JACK (J21) ON THE DRIVER PCB AS SHOWN.


LEGACY VIEW



PLUG THE 6-PIN MALE PLUG FROM THE RADIO RECEIVER INTO THE MATING 6-PIN JACK OF THE ADAPTOR HARNESS (W-2913). PLUG THE MALE 5-PIN END OF THE ADAPTER HARNESS INTO THE MATING 5-PIN CONNECTOR (J45) COMING FROM THE DRIVER.

CONNECTOR LABELED "J45"

W-2913

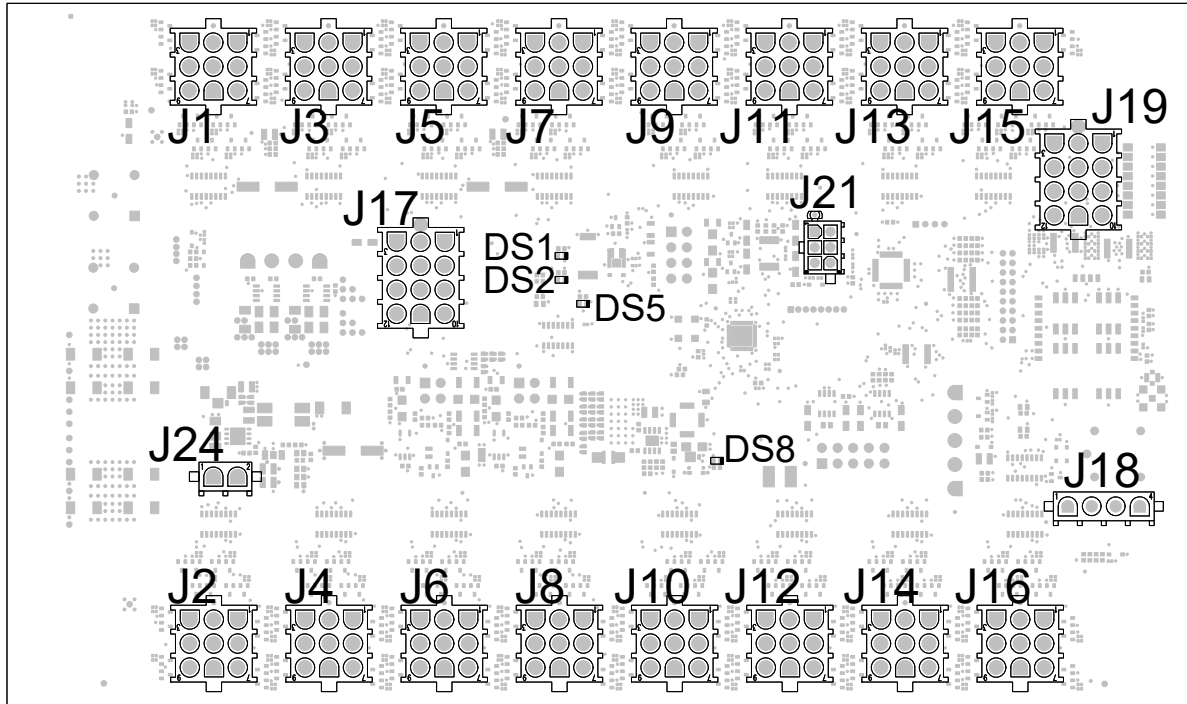
| | | | |
|--|---------------|---|-----------------|
|  DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2012 DAKTRONICS, INC. | |
| | | PROJ: ALL SPORT RADIO TITLE: INSTALLATION DRAWING; OUTDOOR SCBD GEN VI RADIO RECEIVER | |
| DESIGN: MILLER | DRAWN: MILLER | | DATE: 07 AUG 12 |
| SCALE: NONE | | | |
| SHEET | REV | JOB NO: | FUNC-TYPE-SIZE |
| | 03 | P 1110 | F - 01 - A |
| | | | 1109181 |

| | | | |
|--------|-----------------|---|---------|
| REV 03 | DATE: 18 FEB 15 | ADDED GYRUS VIEW UPDATED RADIO RECEIVER AND LEGACY VIEWS | BY: BJB |
| REV 02 | DATE: 26 NOV 14 | ADDED "REMOVE VELCRO" NOTES | BY: KDD |
| REV 01 | DATE: 27 MAR 14 | PER EC-13907, ADDED OUTDOOR SCBD ONLY NOTE | BY: KDD |

| J1-16: Digit Jacks | |
|--------------------|----------|
| Pin | Function |
| 1 | SEG_C |
| 2 | SEG_B |
| 3 | SEG_A |
| 4 | SEG_F |
| 5 | SEG_E |
| 6 | SEG_D |
| 7 | +VCC |
| 8 | SEG_H |
| 9 | SEG_G |

| J17: Power / Signal | |
|---------------------|-----------------|
| Pin | Function |
| 1 | CL_IN_1-P |
| 2 | CL_IN_1-N |
| 3 | LEGACY_232_IN-P |
| 4 | CL_OUT-P |
| 5 | CL_OUT-N |
| 6 | LEGACY_AC_IN1 |
| 7 | GND |
| 8 | CHGND |
| 9 | LEGACY_AC_IN2 |
| 10 | GND |
| 11 | +VUNREG_1_IN |
| 12 | +VUNREG_2_IN |

| J19: Address | |
|--------------|----------|
| Pin | Function |
| 1 | GND |
| 2 | AD00 |
| 3 | AD01 |
| 4 | GND |
| 5 | AD02 |
| 6 | AD03 |
| 7 | GND |
| 8 | AD04 |
| 9 | AD05 |
| 10 | GND |
| 11 | AD06 |
| 12 | AD07 |



| J24: Power Input | |
|------------------|----------|
| Pin | Function |
| 1 | +12V |
| 2 | GND |

| J21: Comm | |
|-----------|---------------|
| Pin | Function |
| 1 | +12V |
| 2 | RS232_TX-P |
| 3 | BOOT0 |
| 4 | CL_RADIO_RX-P |
| 5 | RS232_RX-P |
| 6 | GND |

| J18: Horn | |
|-----------|------------|
| Pin | Function |
| 1 | HORN_OUT-N |
| 2 | AUX_OUT-N |
| 3 | RELAY_COM |
| 4 | RELAY_NO |

Notes:

- Protocols are auto-detected

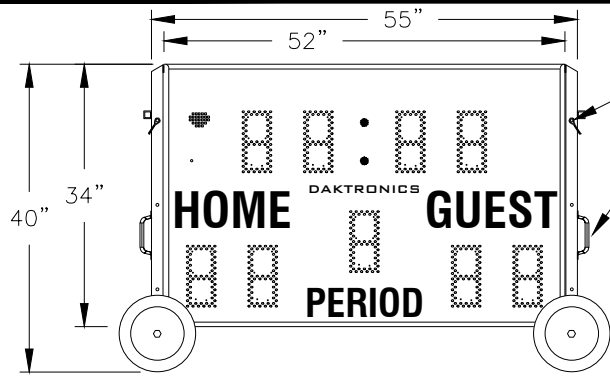
Indicators:

- DS8 = Power
- DS1 = RS-232 Status (Radio)
BLINK = Comm Detected
OFF = No Comm
- DS2 = Heartbeat (Run)
1 sec. Blink = OK
- DS5 = Current Loop Receive
ON = OK
OFF = Disconnected

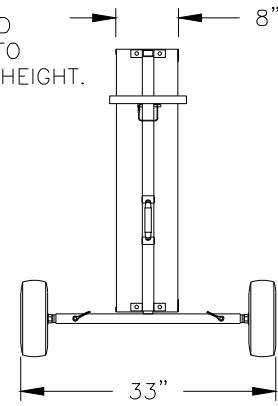
Reference Drawings

- A-128429 for current loop re-drive specifications
- B-1198765 for Switch Address Settings

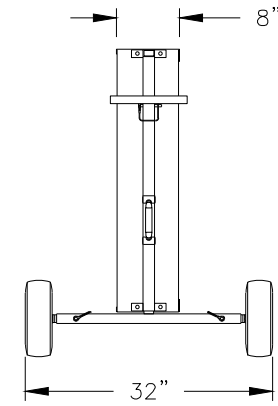
| | | | | | |
|---|--|------------|---|-------|--------|
| DAKTRONICS, INC. BROOKINGS, SD 57006 | | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS INC. Copyright © 2015 Daktronics Inc. | | |
| DO NOT SCALE DRAWING | | | | | |
| PROJECT | . | | | | |
| TITLE | SPECIFICATIONS; GYRUS LED DRIVER, 16 COL | | | | |
| DESIGN | . | | | SHEET | 1 OF 1 |
| DRAWN | DULSCHM | | | SCALE | 1 = 2 |
| DATE | 28 MAY 15 | JOB NUMBER | FUNC-TYPE-SIZE | | |
| REV | 00 | P1192 | R - 04 - A | | |
| 3071833 | | | | | |



FRONT VIEW
TRANSPORT HEIGHT POSITION

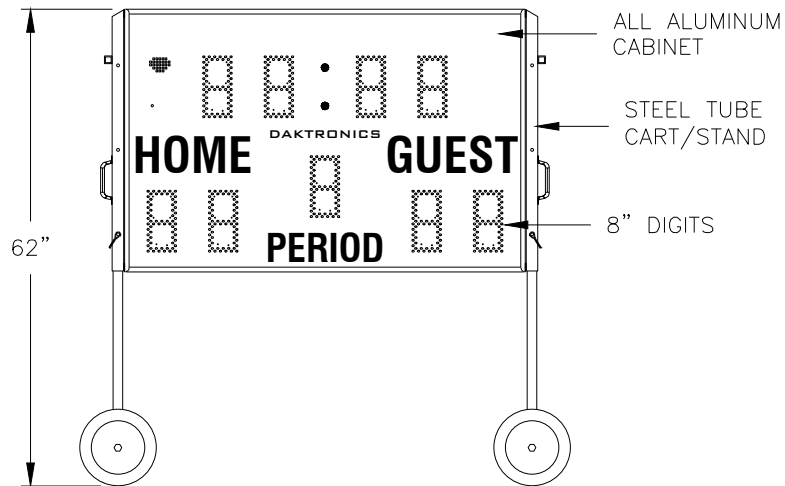


SIDE VIEW
NARROW AXLE POSITION

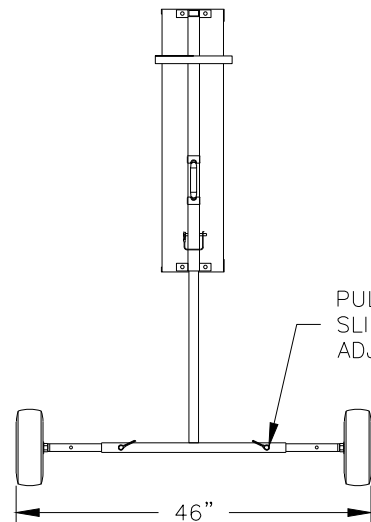


SIDE VIEW

IF THE DISPLAY NEEDS TO FIT THROUGH A SMALLER DOORWAY, FLIP THE ORIENTATION.



FRONT VIEW
MAXIMUM VIEWING HEIGHT POSITION

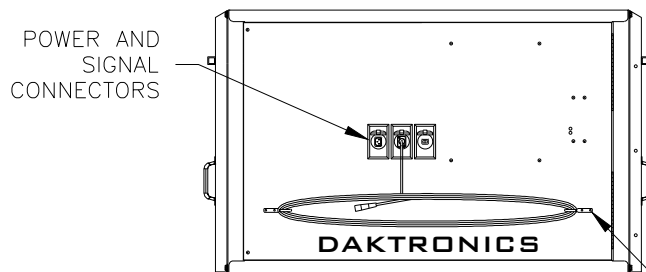


SIDE VIEW
EXTENDED AXLE POSITION

WEIGHT: 150 LB [68 KG], INCLUDING CART. APPROXIMATE DIMENSIONS ARE SHOWN.


USE NARROW AXLE POSITION AND LOWEST HEIGHT TO MOVE SCOREBOARD THROUGH DOORWAYS AND FOR STORAGE.

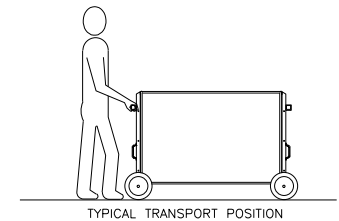
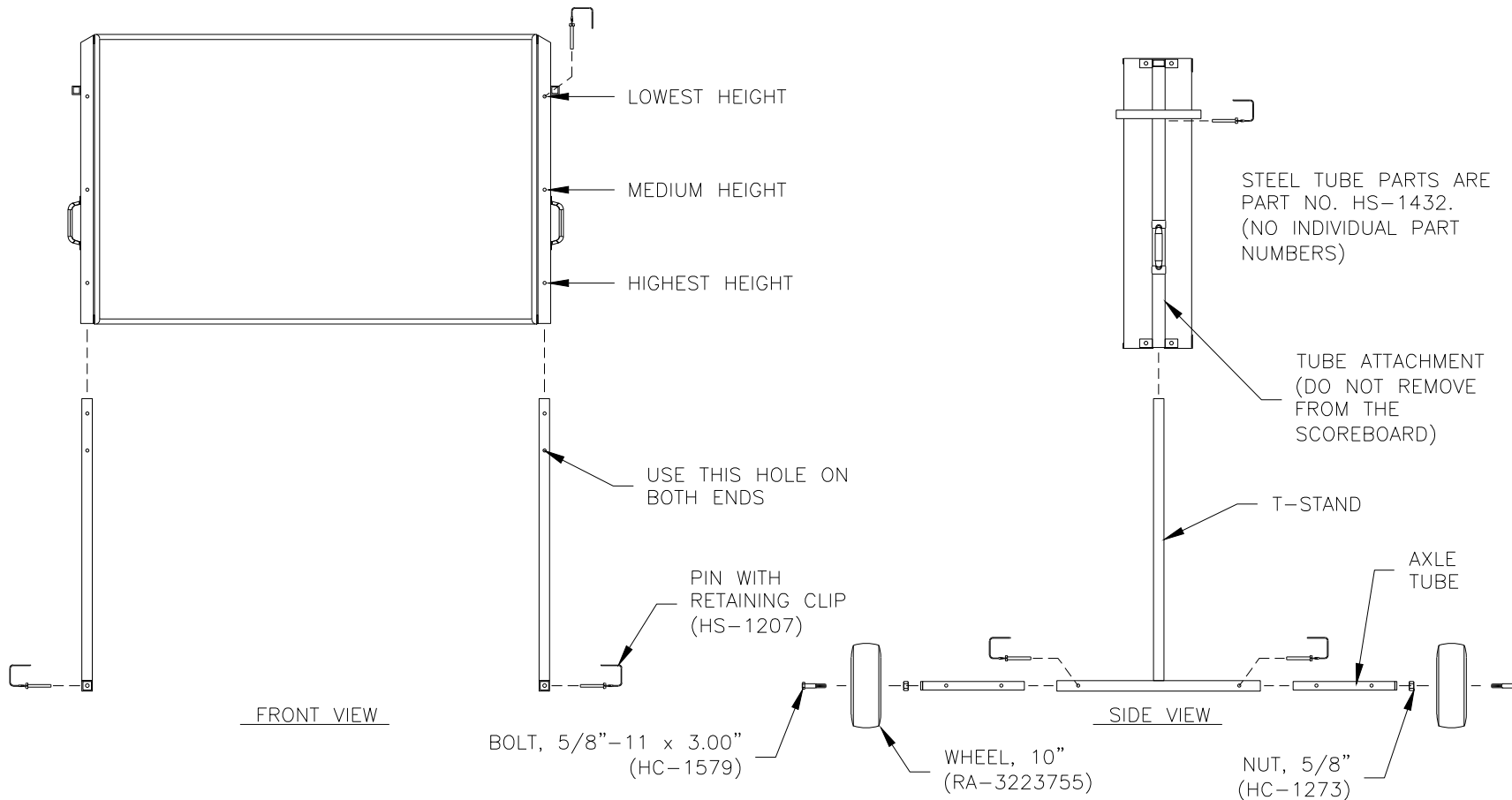
USE EXTENDED AXLE POSITION FOR MORE STABILITY IN LIGHT WINDS. DO NOT USE THE SCOREBOARD IN HIGH WINDS.



REAR VIEW

HOOKS FOR STORING LONG SIGNAL CABLE

| | | | |
|--|---------------------------------|--|--|
| REV 01 | DATE: 10 AUG 17 | PER CN-40670, UPDATED WHEEL DETAIL AND ADDED HS-1335 HOOK DETAIL ON REAR VIEW OF DISPLAY | BY: KDD |
|  THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | | |  THIRD ANGLE PROJECTION |
| PROJECT: MS-2113 | | | |
| TITLE: MECHANICAL SPECIFICATIONS, MS-2113 | | | |
| DATE: 27-JAN-16 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV |
| SCALE: 1 = 25 | DO NOT SCALE DRAWING | | 01 |
| DESIGN: BNYBO | JOB NO. P1192 | FUNC - TYPE - SIZE E - 10 - A | 3270213 |
| DRAWN: BNYBO | | | |



CART PARTS PROVIDED INCLUDE: TWO TUBE ATTACHMENTS, TWO T-STANDS, FOUR AXLE TUBES, FOUR WHEELS, SIX PINS, FOUR BOLTS, FOUR NUTS.

INSERT THE AXLE TUBES INTO THE T-STANDS, INSERT PINS AND SECURE WITH THE CLIPS.

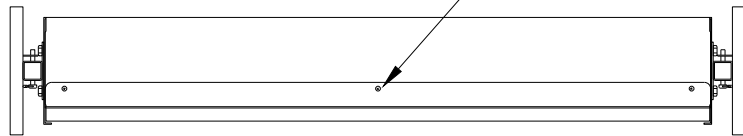
INSERT THE T-STAND INTO THE TUBE ATTACHMENT, INSERT PINS AND SECURE WITH THE CLIPS.

MOUNT THE WHEELS TO THE T-STANDS ON BOTH ENDS OF THE DISPLAY USING THE NUTS AS SPACERS AND SECURE WITH THE BOLTS. TIGHTEN WITH A 15/16" WRENCH.

LOWER THE SCOREBOARD FOR TRANSPORTING AND RAISE IT FOR VIEWING. EXTEND THE AXLES FOR INCREASED STABILITY IN WINDS. DO NOT USE THE SCOREBOARD IN HIGH WINDS. DO NOT TRANSPORT THE SCOREBOARD IN THE RAISED POSITION.

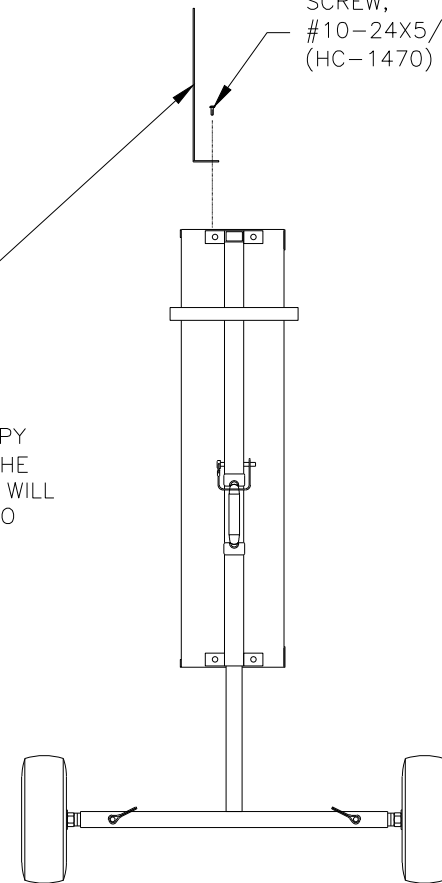
| | | | |
|--|---------------------------------|--|----------------------------|
| REV 01 | DATE: 10 AUG 17 | PER CN-40670, MADE DRAWING GENERIC, REPLACED HC-3223756 AND HC-1846 WITH HC-1579 AND HC-1273 | BY: KDD |
| | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | THIRD ANGLE PROJECTION |
| PROJECT: MS-2113 | | | |
| TITLE: CART ASSEMBLY, PORTABLE DISPLAY | | | |
| DATE: 27-JAN-16 | DIM UNITS: INCHES [MILLIMETERS] | | SHEET |
| SCALE: 1 = 20 | DO NOT SCALE DRAWING | | REV 01 |
| DESIGN: BNYBO | JOB NO. P1192 | FUNC - TYPE - SIZE E - 10 - A | 3274045 |
| DRAWN: BNYBO | | | |

ATTACH THE AD PANEL TO THE MS-2113, USING THREE SCREWS INTO THE THREADED INSERTS LOCATED IN THE TOP OF THE SCOREBOARD.



TOP VIEW

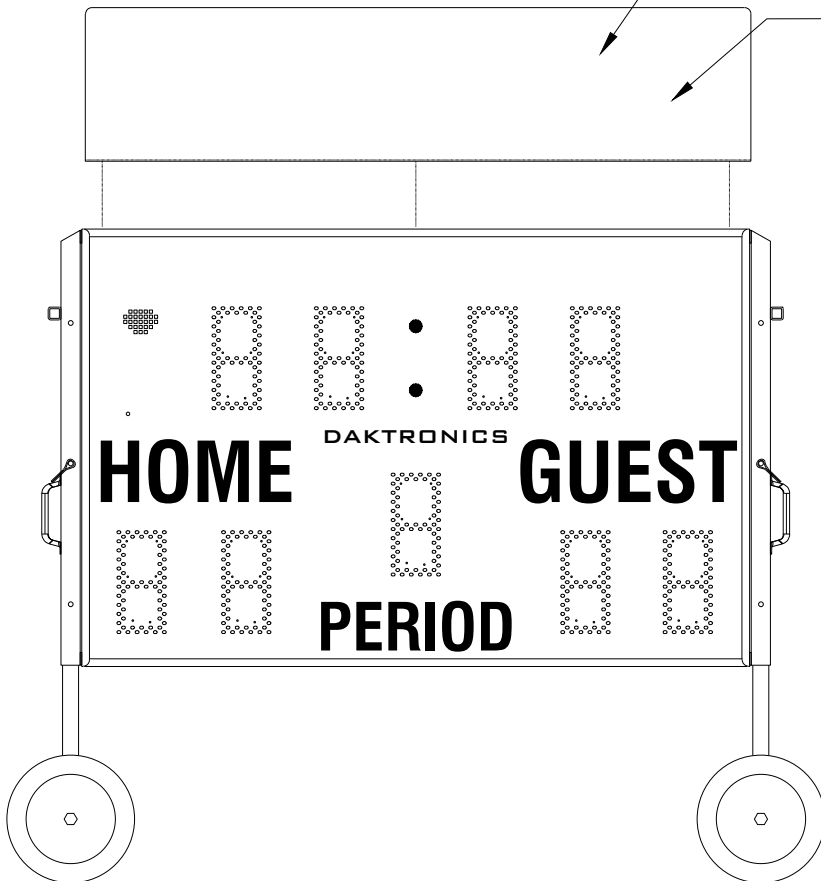
SCREW,
#10-24X5/8"
(HC-1470)



SIDE VIEW

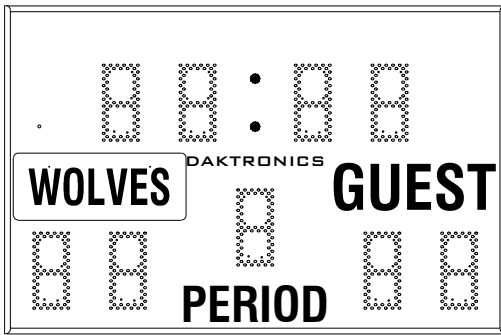
AD PANEL, 52"W X 12"H

APPLY VINYL COPY TO THIS SIDE (THE RETURN FLANGE WILL BE DOWN AND TO THE BACK).

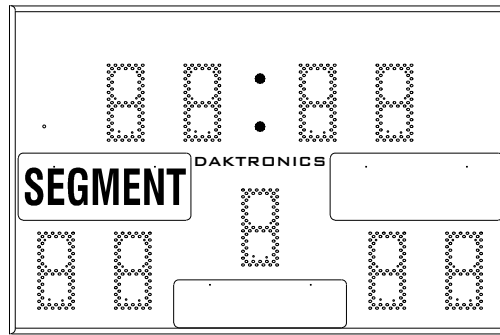


FRONT VIEW

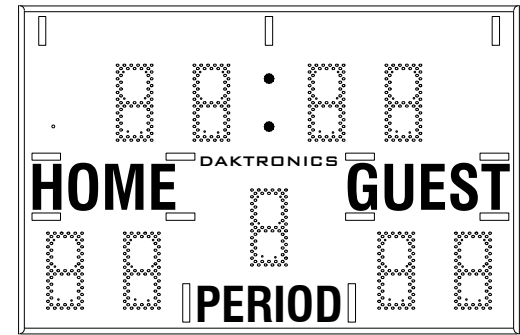
| | | | |
|---|---------------------------------|--|---|
| REV 01 | DATE: 10 AUG 17 | PER CN-40670, UPDATED WHEEL DETAIL | BY: KDD |
|  | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | THIRD ANGLE PROJECTION  |
| PROJECT: MS-2113 | | | |
| TITLE: AD PANEL INSTALLATION, MS-2113 | | | |
| DATE: 2-FEB-16 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV |
| SCALE: 1 = 15 | DO NOT SCALE DRAWING | | 01 |
| DESIGN: BNYBO | JOB NO. P1192 | FUNC - TYPE - SIZE E - 10 - A | 3274569 |
| DRAWN: BNYBO | | | |



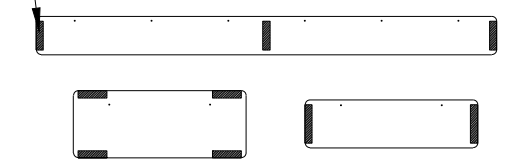
CLOCK/SCORE MODE
OPTIONAL TEAM NAME



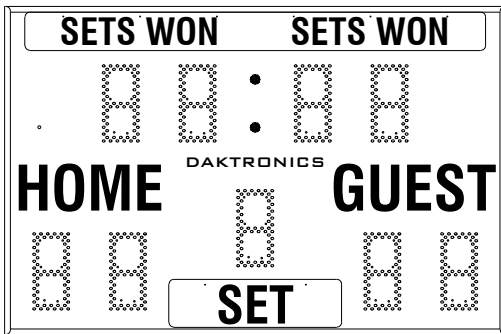
SEGMENT TIMNG MODE



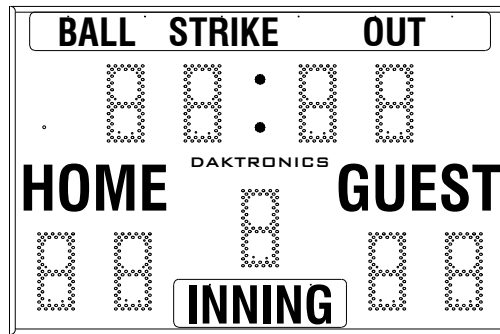
HOOK & LOOP FASTENER STRIPS APPLIED TO THE BACKS OF THE CAPTION PANELS
THE LOOP STRIP STAYS ON THE PANEL.
THE HOOK STRIP STAYS ON THE SCOREBOARD.



REAR VIEW OF CAPTION PANELS



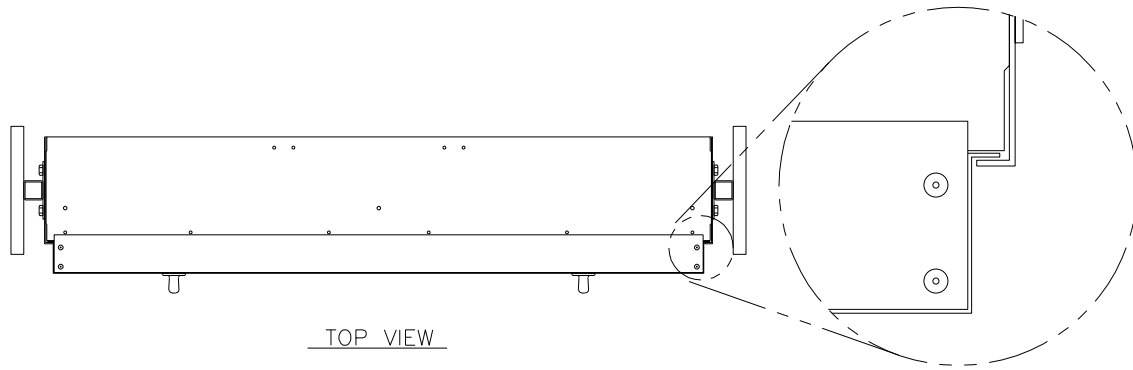
VOLLEYBALL MODE



BASEBALL/SOFTBALL MODE

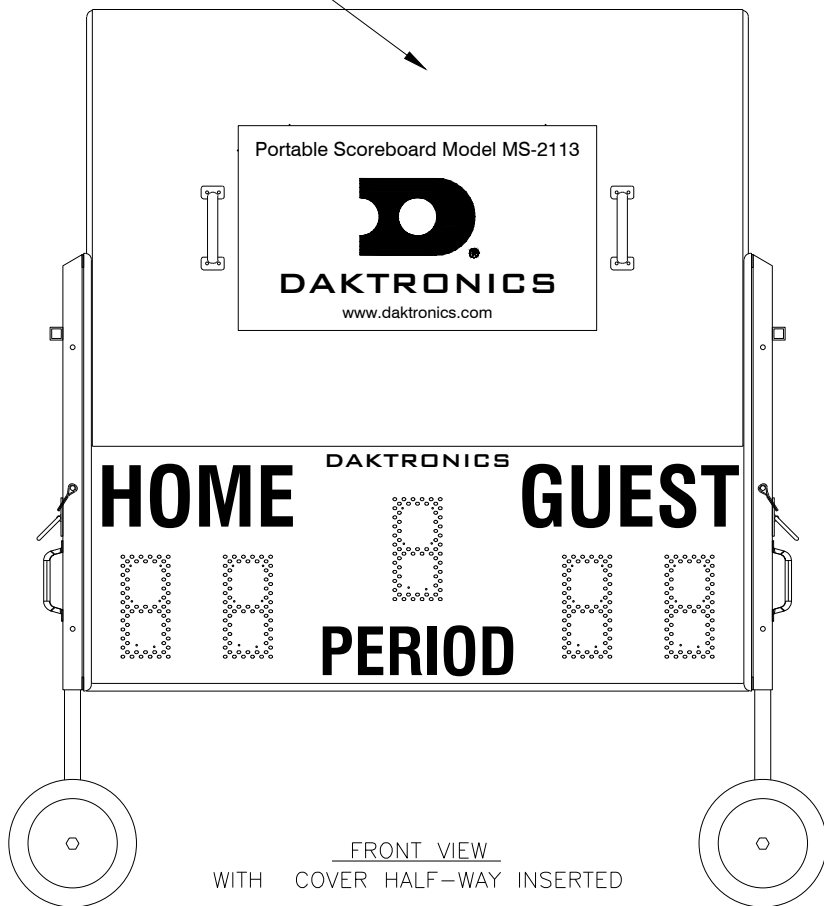
REMOVE THE BACKING FROM THE FASTENER STRIPS ON THE BACK OF THE CAPTION PANEL.
POSITION THE PANEL ON THE SCOREBOARD AND PRESS IN PLACE.
THE PANEL CAN BE REMOVED, LEAVING THE HOOK STRIPS ATTACHED TO THE SCOREBOARD, AS SHOWN ABOVE, AT RIGHT.

| | | | | | |
|---------------------------------|--|--|--------------------|---------|-----|
| | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | | | |
| PROJECT: MS-2113 | | | | | |
| TITLE: CAPTION OPTIONS, MS-2113 | | | | | |
| DATE: 2-FEB-16 | | DIM UNITS: INCHES [MILLIMETERS] | | SHEET | REV |
| SCALE: 1 = 20 | | DO NOT SCALE DRAWING | | | 00 |
| DESIGN: BNYBO | | JOB NO. | FUNC - TYPE - SIZE | 3274719 | |
| DRAWN: BNYBO | | P1192 | E - 10 - A | | |



TOP VIEW

OPTIONAL FRONT COVER
OA-1192-1092



FRONT VIEW
WITH COVER HALF-WAY INSERTED

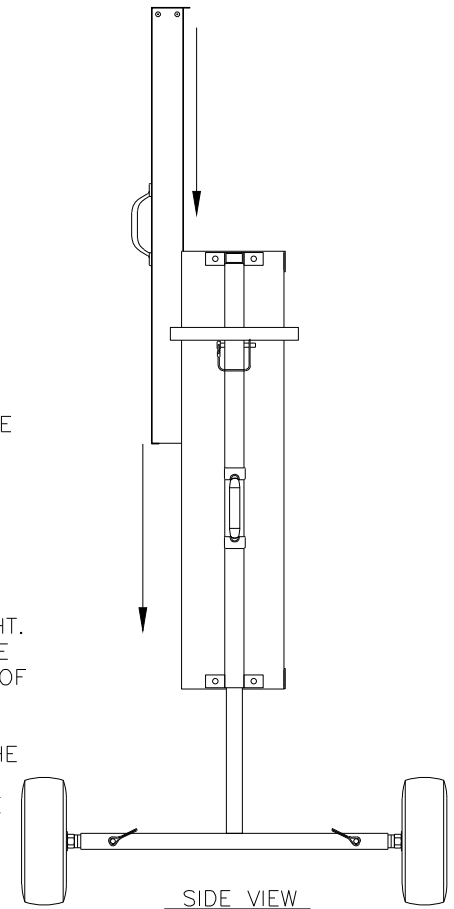
NOTES:

IF INSTALLED WITH THE RADIO ANTENNA, IT IS HIGHLY RECOMMENDED TO REMOVE THE ANTENNA BEFORE INSTALLING OR REMOVING THE COVER.

THE COVER IS DESIGNED TO PROTECT THE MS-2113 DURING TRANSPORTATION AND STORAGE.

LOWER THE MS-2113 TO ITS LOWEST HEIGHT. USING THE HANDLES ON THE FRONT OF THE COVER, RAISE THE COVER ABOVE THE TOP OF THE MS-2113.

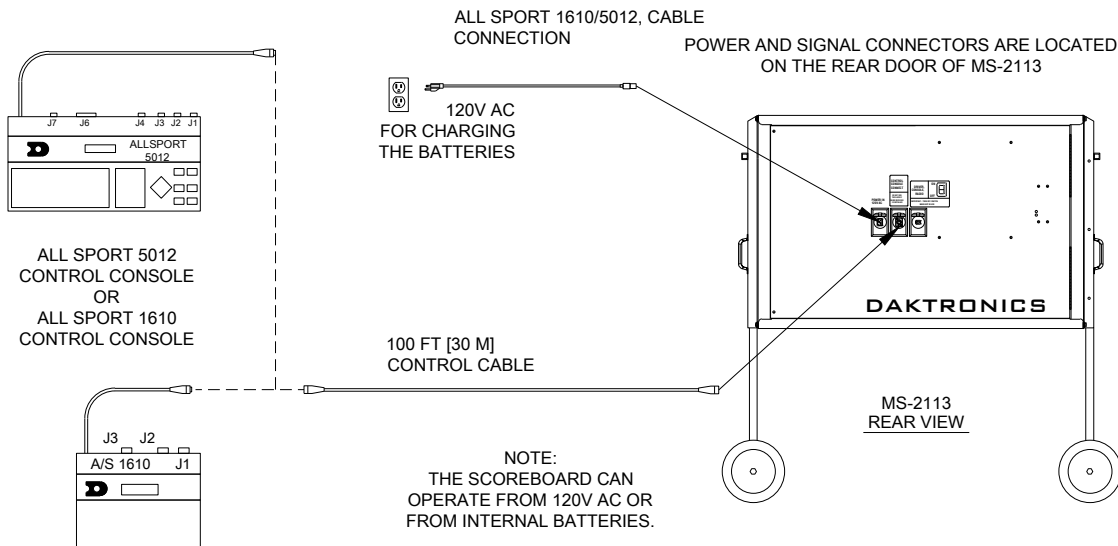
ENGAGE THE FLANGES ON THE SIDES OF THE COVER INTO THE SLOTS AT EITHER SIDE OF THE FRONT OF THE MS-2113. LOWER THE COVER UNTIL ITS TOP RESTS AGAINST THE TOP OF THE MS-2113.



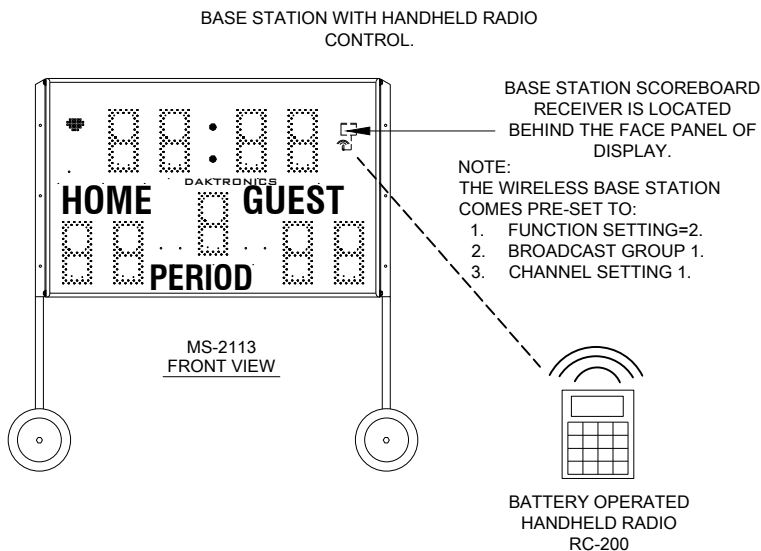
SIDE VIEW

| | | | |
|--|---------------------------------|------------------------------------|--|
| REV 01 | DATE: 24 AUG 17 | PER CN-40670, UPDATED WHEEL DETAIL | BY: KDD |
|  THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | | |  THIRD ANGLE PROJECTION |
| PROJECT: MS-2113 | | | |
| TITLE: COVER INSTALLATION, MS-2113 | | | |
| DATE: 2-FEB-16 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV |
| SCALE: 1 = 15 | DO NOT SCALE DRAWING | | 01 |
| DESIGN: BNYBO | JOB NO. P1192 | FUNC - TYPE - SIZE E - 10 - A | 3274720 |
| DRAWN: BNYBO | | | |

DOMESTIC USE ONLY

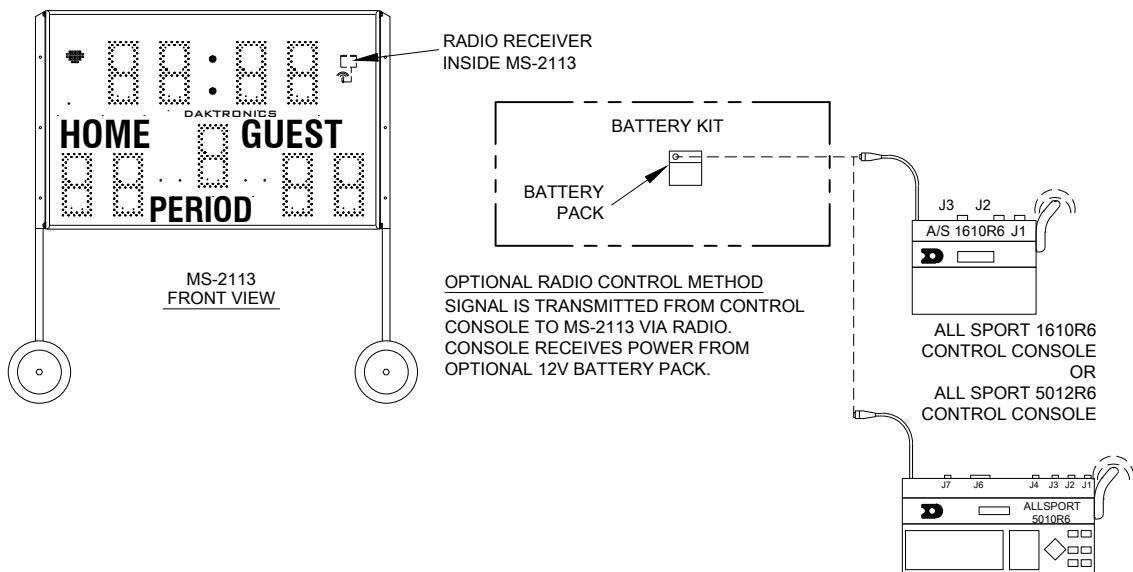


DOMESTIC USE ONLY

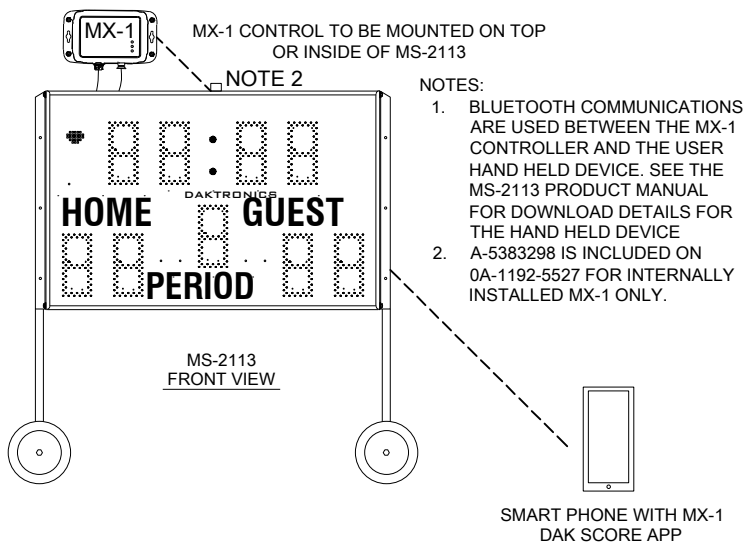


DOMESTIC USE ONLY

ALL SPORT 1610R6 RADIO CONTROL.



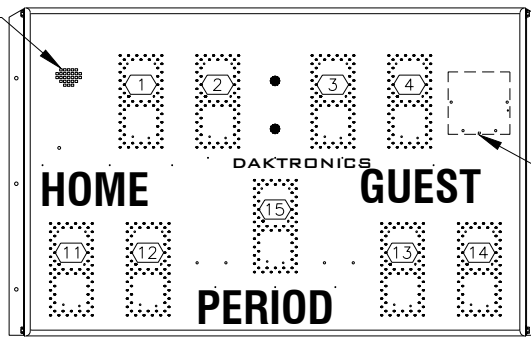
HAND HELD MX-1 CONTROL



| | | | |
|--------|--------------------|--|---------|
| REV 04 | DATE: 03 JUN 24 | PER CN- 179898, ADDED NOTE 2 FOR NEW INTERNALLY INSTALLED MX-1 WITH BLUETOOTH ANTENNA. | BY: TBS |
| REV 03 | DATE: 10 APR 20 | ADDED MX-1 VIEW WITH SMART PHONE | BY: MTR |
| REV 02 | DATE: 11 APR 18 | ADDED AS-5012 DETAIL ADDED DOMESTIC DETAIL MINOR TEXT CHANGES | BY: NCB |
| REV 01 | DATE: 15 SEPT 2017 | CORRECT BASE STATION FUNCTION, BROADCAST GROUP AND CHANNEL SETTINGS | BY: SJC |

| | | | | | |
|-----------------|---------------|--|---------------------------------------|----|-------|
| | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | | | |
| | | PROJECT: MS-2113 | TITLE: SYSTEM RISER DIAGRAMS- MS-2113 | | SHEET |
| DATE: 02 FEB 16 | | DIM UNITS: INCHES [MILLIMETERS] | | 04 | |
| SCALE: 1=1 | | DO NOT SCALE DRAWING | | | |
| DESIGN: SCOLGRO | JOB NO. P1192 | FUNC - TYPE - SIZE R - 01 - A | 3274967 | | |
| DRAWN: SCOLGRO | | | | | |

HORN



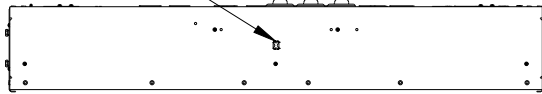
④ THE NUMBER IN EACH DIGIT INDICATES THE DRIVER PLUG NO. WIRED TO THAT DIGIT.

THE DRIVER IS SET TO ADDRESS NO. 11.

HOLE FOR MOUNTING OPTIONAL RADIO RECEIVER ANTENNA

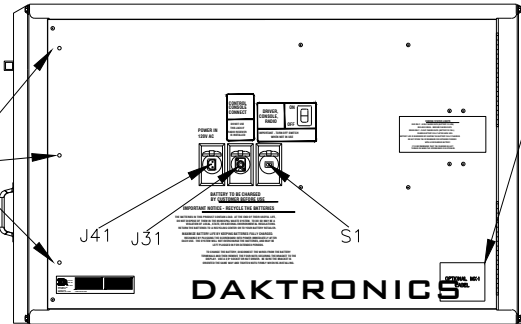
FRONT VIEW
DRIVER ASSIGNMENTS

OPTIONAL MX-1 ANTENNA INSTALL LOCATION
SEE DWG-05420078 (INSTALL OG COVER LABEL IF MX1 NOT INCLUDED)



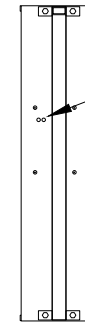
TOP VIEW
THERE ARE THREE 1/2 TURN ACCESS LATCHES THAT OPEN THE BACK DOOR TO ACCESS INTERNAL COMPONENTS.

ALL SPORT 1600 CONTROL.



REAR VIEW
WITH BACK SHEET CLOSED

OPTIONAL MX-1 QR CODE
SEE BOM



SIDE VIEW

CHARGE STATUS LIGHTS
"RED ONLY" ---- SOFT CHARGE OR BULK CHARGE DEPENDING ON BATTERY DISCHARGE STATE
"RED & GREEN" -- ABSORPTION CHARGE
"GREEN" ONLY -- FLOAT CHARGE

POWER REQUIREMENT: 120V AC, 300 WATTS.
MS-2113 CAN OPERATE ON 120V AC POWER OR INTERNAL 12 VOLT BATTERIES. BATTERIES CAN OPERATE THE MS-2013 FOR UP TO 14 HOURS OF NORMAL USE. RECHARGE BATTERIES IMMEDIATELY AFTER EACH USE. THE CHARGER IS OPERATING WHENEVER THE 120V AC POWER IS CONNECTED. THE SYSTEM WILL NOT OVERCHARGE THE BATTERIES.

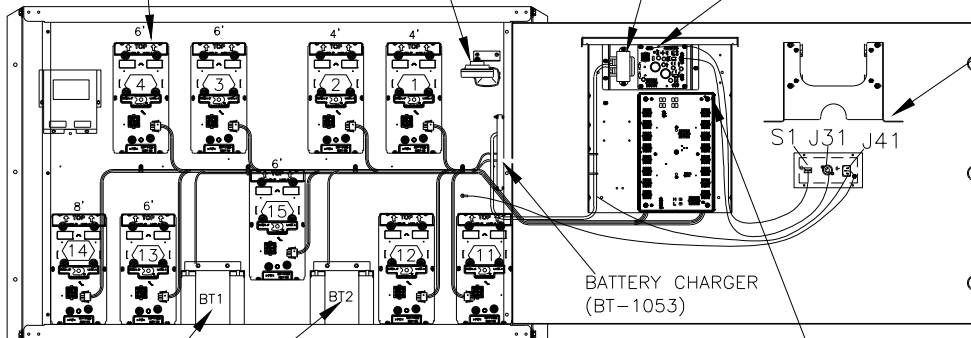
DIGIT, 8" RED (SEE BOM)

LS1 HORN (0A-1072-0023)

TRANSFORMER, 120VAC PRIMARY, 16VAC SEC, 6.25A (T-1066)

MS-2013 PORTABLE BATTERY MONITOR (0P-1192-0097)

OPTIONAL MX-1 MOUNTING LOCATION
SEE BOM



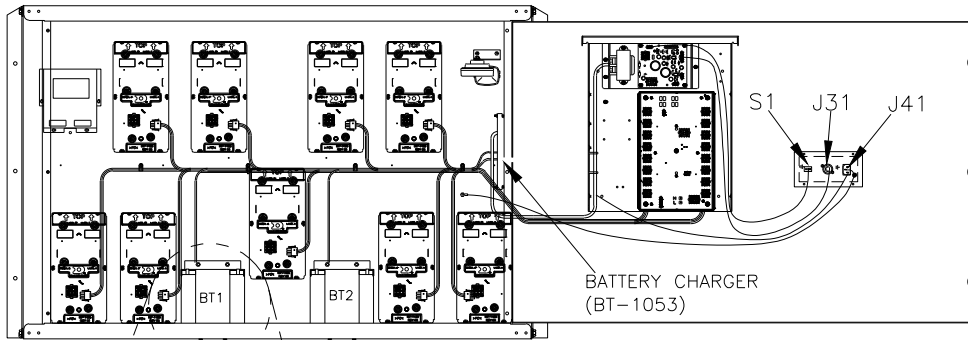
BT1 and BT2 BATTERIES
12V, 28AH (BT-1023)

0A-1782-0100

REAR VIEW
WITH BACK SHEET OPEN
DRIVER COVER IS REMOVED.

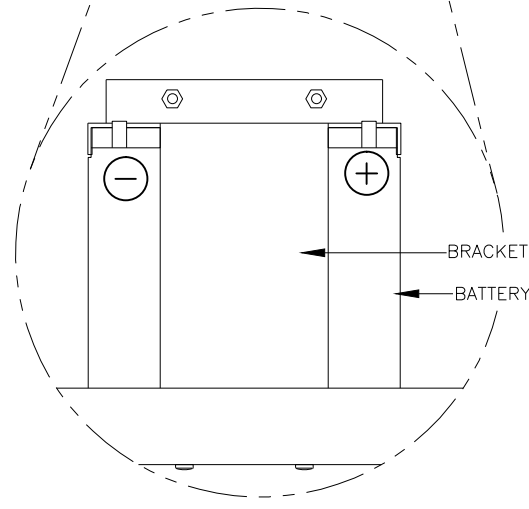
| | | | | | |
|---|--|--|--|---------------------------|--|
| | | THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2016 DAKTRONICS, INC. (USA) | | | |
| PROJECT: MS-2113 | | | | | |
| TITLE: ELECTRICAL SPECIFICATIONS- MS-2113 | | | | | |
| DATE: 02 FEB 16 | | DIM UNITS: INCHES [MILLIMETERS] | | SHEET | |
| SCALE: 1=1 | | DO NOT SCALE DRAWING | | | |
| DESIGN: SCOLGRO | | JOB NO. P1192 | | FUNC - TYPE - SIZE R-04-A | |
| DRAWN: SCOLGRO | | | | 3275249 | |

| | | | |
|--------|-----------------|---|---------|
| REV 01 | DATE: 03 JUN 24 | PER CN-179898, ADDED FACTORY INSTALLED MX 1 OPTION. | BY: TBS |
|--------|-----------------|---|---------|

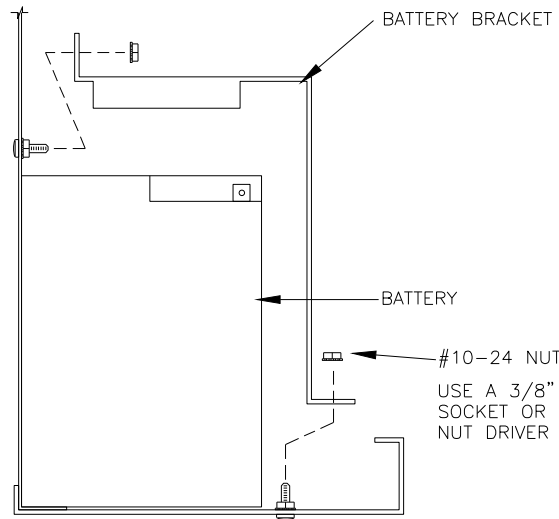


REAR VIEW
WITH BACK SHEET OPEN

BATTERY PERFORMANCE WILL DETERIORATE WITH AGE AND USE. MAXIMIZE BATTERY LIFE BY KEEPING BATTERIES FULLY CHARGED WHEN NOT IN USE. IT IS RECOMMENDED THAT THE MS-2113 BE LEFT PLUGGED IN TO 120V AC POWER WHEN IT IS STORED, IF POSSIBLE. OTHERWISE, CHARGE BATTERIES FOR AT LEAST 12 HOURS BEFORE STORING.



REAR VIEW



SIDE VIEW
BATTERY AND BRACKET ASSEMBLY

TO REPLACE THE BATTERIES, OPEN THE BACK SHEET AND REMOVE THE SCREWS SECURING THE WIRES TO THE BATTERY TERMINALS.

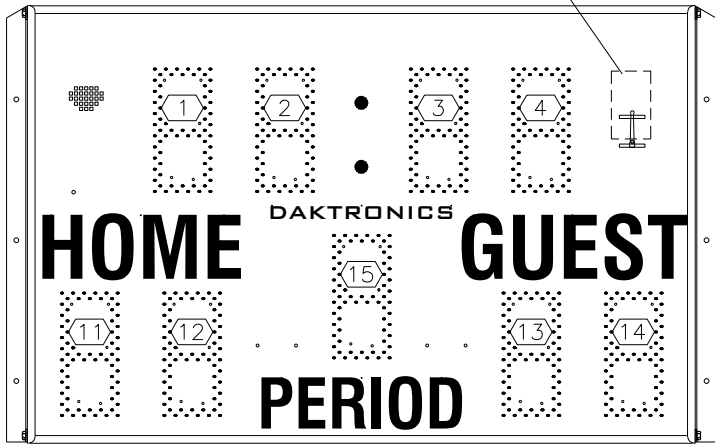
REMOVE THE BATTERY BRACKETS BY REMOVING THE NUTS THAT SECURE THE BRACKETS TO THE STUDS. THERE ARE FOUR NUTS PER BRACKET. REMOVE THE BATTERY FROM THE MS-2113 AND INSTALL NEW BATTERY. INSTALLATION IS THE REVERSE OF REMOVAL.

DO NOT ALLOW BATTERY TERMINALS TO CONTACT ANY METAL SURFACE. BE SURE THE WIRES ARE CONNECTED CORRECTLY. IMPROPER CONNECTION CAN RESULT IN INJURY OR DAMAGE TO COMPONENTS.

THE BATTERY IS DAKTRONICS PART NUMBER BT-1023 (POWERSONIC PART NUMBER PS-12280). RATING IS 12 VOLTS, 28 AMP-HOURS. IF USING A DIFFERENT BATTERY, BE SURE THAT TERMINALS ARE ORIENTED THE SAME TO ENSURE PROPER CONNECTION. BRACKET WILL NOT FIT A BATTERY OF DIFFERENT DIMENSIONS.

| | | | | | |
|---------------------------------|--|--|--|-------------------------------|--|
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| | | PROJECT: MS-2113 | | | |
| TITLE: BATTERY SERVICE- MS-2113 | | | | REV 00 | |
| DATE: 03 FEB 16 | | DIM UNITS: INCHES [MILLIMETERS] | | DO NOT SCALE DRAWING | |
| SCALE: 1=1 | | JOB NO. P1192 | | FUNC - TYPE - SIZE R - 04 - A | |
| DESIGN: SCOLGRO | | DRAWN: SCOLGRO | | 3276260 | |

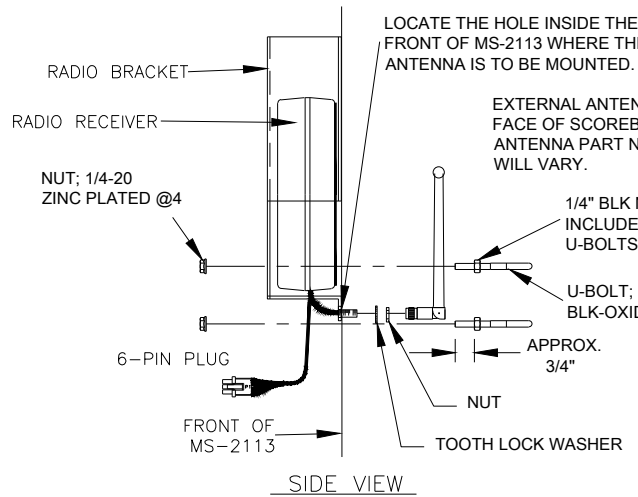
RECEIVER MOUNTED BEHIND THE FACE OF MS-2113



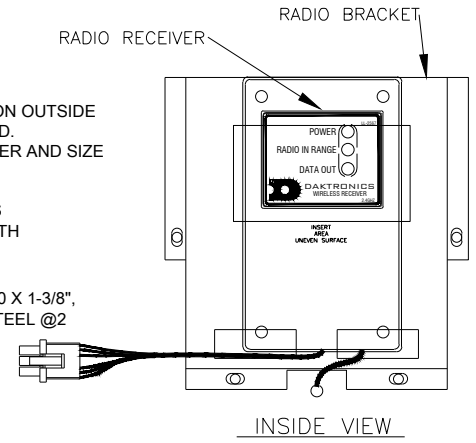
FRONT VIEW

NOTES:

IF THERE ARE TO BE MULTIPLE SCOREBOARD RECEIVERS AND MULTIPLE CONTROL CONSOLES OPERATING IN THE AREA, REFER TO RADIO INSTALLATION MANUAL(S) TO CHANGE THE CHANNEL NUMBER ON THE RECEIVER PRIOR TO INSTALLING.

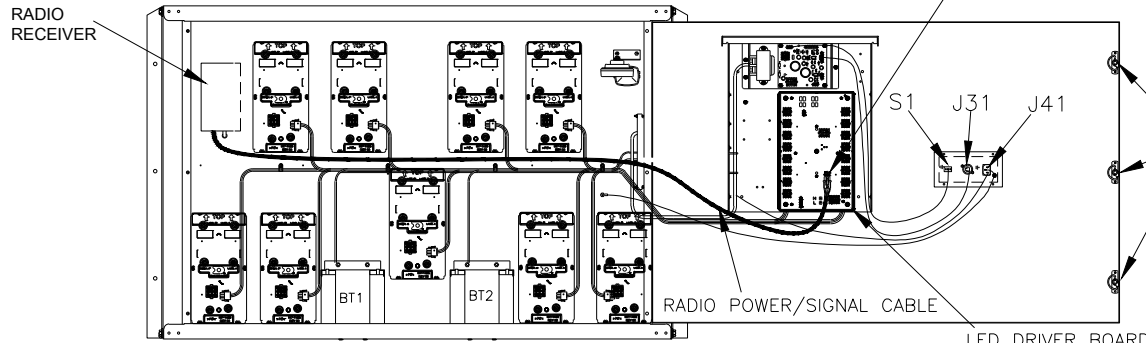


SIDE VIEW



INSIDE VIEW

PLUG THE 6-PIN MALE PLUG FROM THE RADIO RECEIVER INTO THE MATING 6-PIN JACK (J21) ON THE DRIVER PCB AS SHOWN.



REAR VIEW

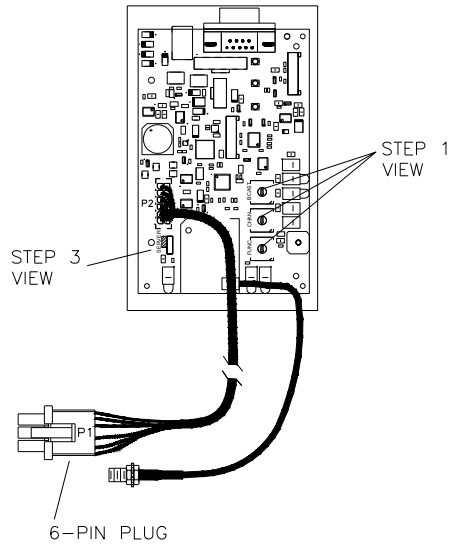
WITH BACK SHEET OPEN DRIVER COVER IS REMOVED.

NOTES:
TURN THE THREE "1/2" TURN ACCESS LATCHES THAT ARE SECURING THE BACK OF THE MS-2113, AND SWING THE DOOR OPEN.

| | | | |
|---|---------------------------------|--|------------|
| REV 01 | DATE: 12 JUL 16 | PER EC-21871; ADDED U-BOLTS AND NECESSARY DESCRIPTIONS | BY: PAL |
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| PROJECT: MS-2113 | | | |
| TITLE: RADIO RECEIVER INSTALLATION- MS-2113 | | | |
| DATE: 03 FEB 16 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV |
| SCALE: 1=1 | DO NOT SCALE DRAWING | | 01 |
| DESIGN: SCOLGRO | JOB NO. P1192 | FUNC - TYPE - SIZE R - 10 - A | 3276286 |
| DRAWN: SCOLGRO | | | |

TOP VIEW
BASE STATION VIEW WITH FUNCTION SETTINGS CHART

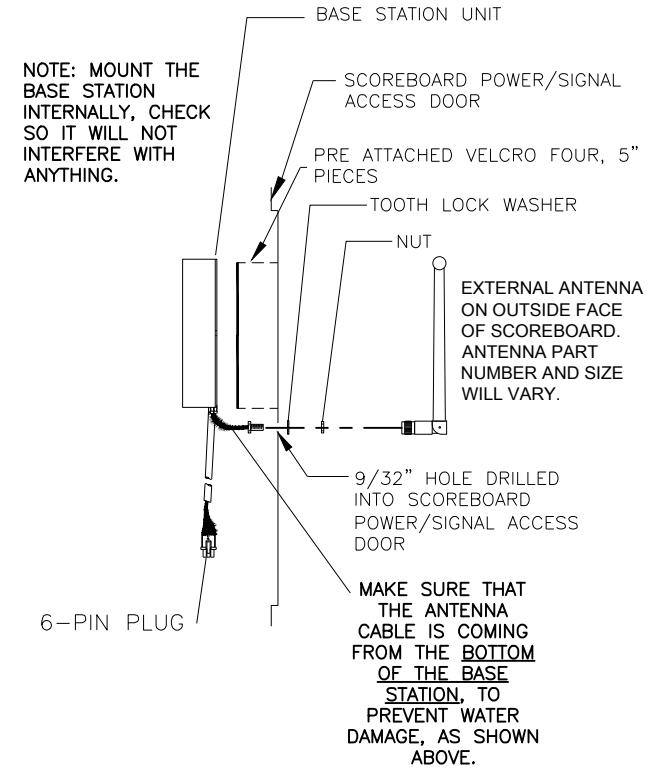
- STEP 1**
USING A SMALL FLAT HEAD SCREW DRIVER OR YOUR FINGERS CHANGE THE SWITCHES TO THE DESIRED FUNCTION, GROUP, AND CHANNEL NUMBER. (REFER TO STEP 1 VIEW AND CHART.)
- STEP 2**
NOTE THE CHANNEL NUMBER SET FOR THIS UNIT.
- STEP 3**
BASE STATION IS SET IN FACTORY FOR SERVER MODE. FOR CLIENT MODE, SET JUMPERS TO RIGHT MOST POSITION.



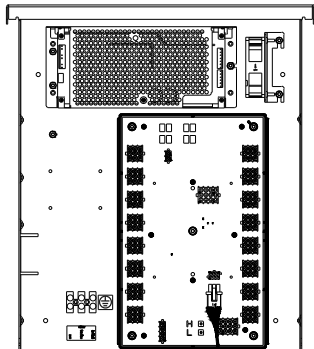
STEP 1 CHART

| FUNCTION SETTING | FUNCTION (SERVER MODE) |
|------------------|-----------------------------------|
| 1 | CAN HANDHELD JUDGES CONSOLE |
| 2 | ALL SPORT SCBD CONTROLLER - GEN I |
| F | RESET MEMORY/TEST |

SIDE VIEW
BASE STATION MOUNTING DETAILS FOR MOST OUTDOOR SCOREBOARDS



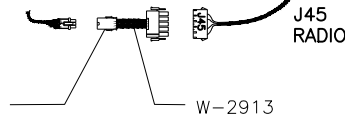
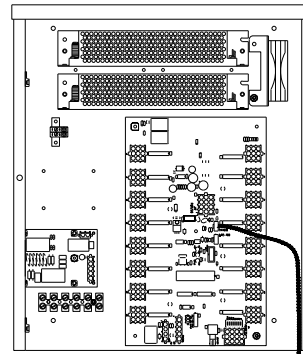
GYRUS VIEW CONNECTING THE BASE STATION WIRE HARNESS
FRONT VIEW OF DRIVER ENCLOSURE; LID REMOVED



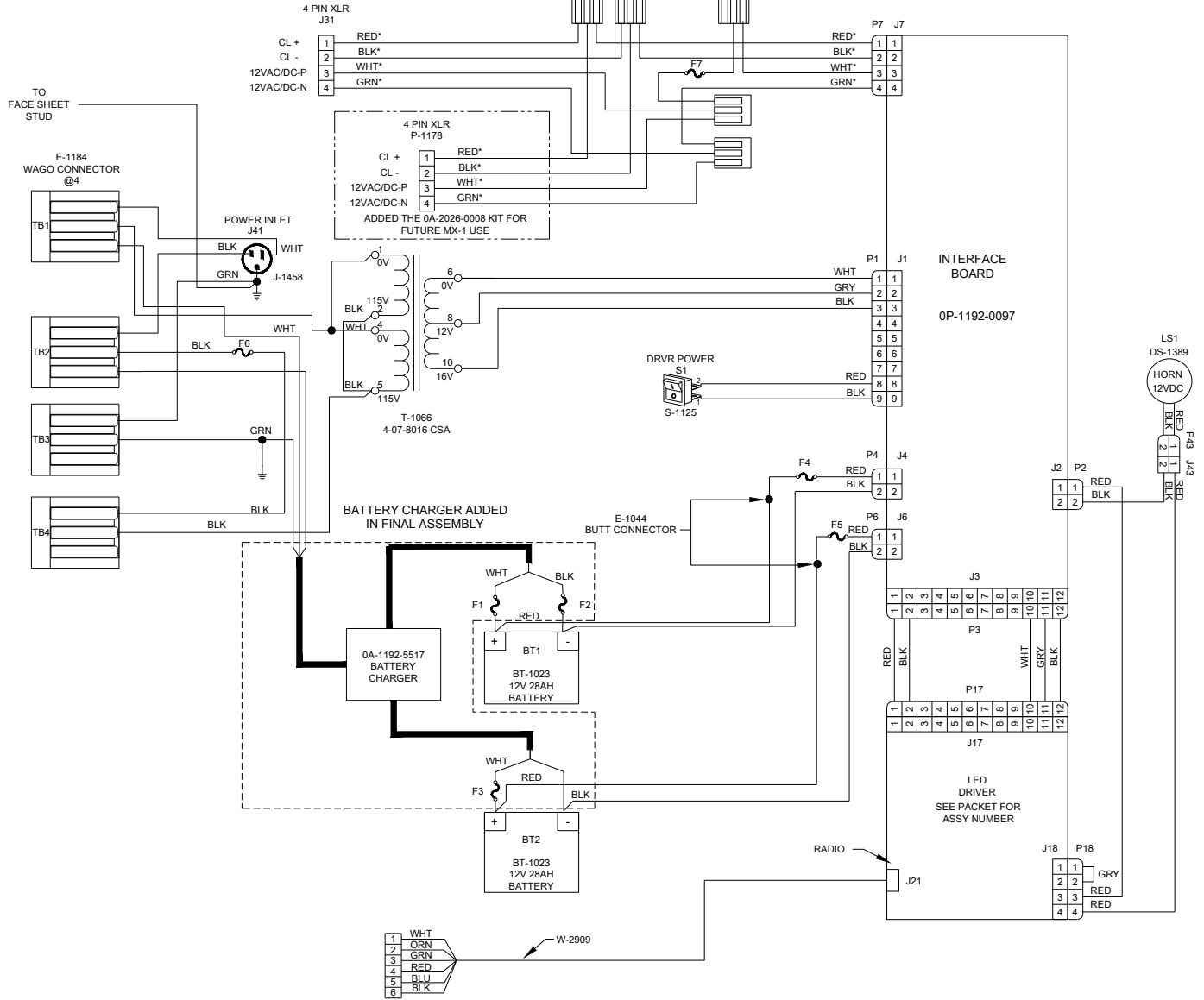
PLUG THE 6-PIN MALE PLUG FROM THE BASE STATION INTO THE MATING 6-PIN JACK (J21) ON THE DRIVER PCB AS SHOWN.

PLUG THE 6-PIN MALE PLUG FROM THE BASE STATION INTO THE MATING 6-PIN JACK OF THE ADAPTOR HARNESS (W-2913).
PLUG THE MALE 5-PIN END OF THE ADAPTER HARNESS INTO THE MATING 5-PIN CONNECTOR (J45) COMING FROM THE DRIVER.

LEGACY VIEW



| | | | |
|--|---------------------------------|-------------------------------|------------|
| REV 01 | DATE: 15 SEPT 2017 | CORRECTED TITLE | BY: SJC |
| | | | |
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| PROJECT: RC-200 | | | |
| TITLE: BASE STATION: OUTDOOR INSTALLATION | | | |
| DATE: 17 MAY 17 | DIM UNITS: INCHES [MILLIMETERS] | | SHEET |
| SCALE: NTS | DO NOT SCALE DRAWING | | REV 01 |
| DESIGN: MMILLER | JOB NO. P1110 | FUNC - TYPE - SIZE E - 07 - A | 3640913 |
| DRAWN: AHUNTER | | | |



NOTE:
 ALL CONDUCTORS ARE 18 AWG EXCEPT * INDICATES 22 AWG CONDUCTORS AND THE INLINE FUSES, F4, F5 AND F6 WHICH ARE 14AWG.

BATTERY TERMINALS MAY BE LOCATED ON DIFFERENT SIDES OF THE BATTERY DEPENDING ON MANUFACTURER OR HOW THE BATTERY IS INSTALLED. VERIFY THE POLARITY ON THE BATTERY BEFORE CONNECTING THE HARNESS.

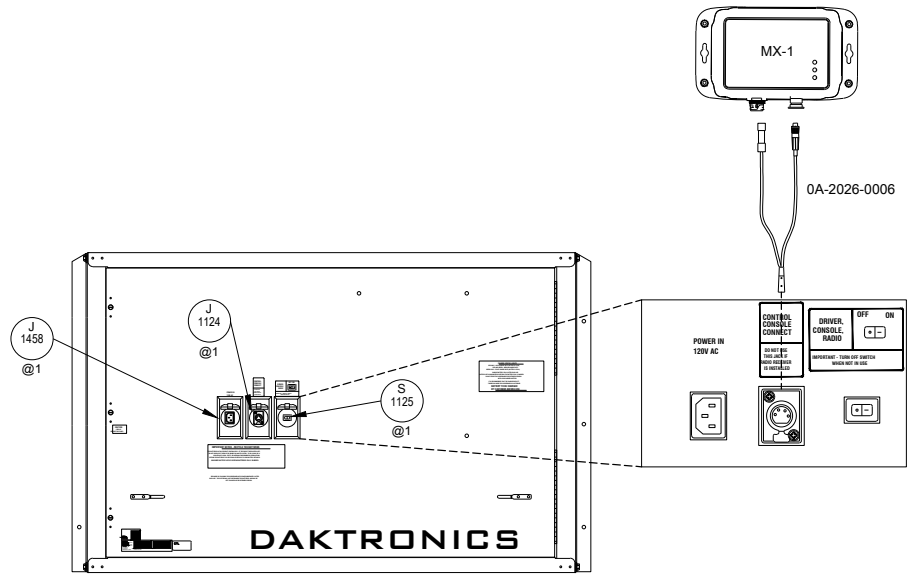
F1, F2, AND F3 ARE PROVIDED WITH THE BATTERY CHARGER, 0A-1192-5517.
 F4 AND F5 ARE INLINE FUSE WITH 14 AWG WIRES. USE WITH F-1031 (7 AMP, MDL) FUSE.
 F6 AND F7 IS ARE INLINE FUSES WITH 14 AWG WIRES. USE WITH F-1077 (1 AMP, MDL) FUSE.

| | | | |
|--------|-----------------|--|---------|
| REV 02 | DATE: 14 APR 23 | PER CN-157898 ADD INLINE FUSE TO XLR OUTPUT (F7) | BY: SJC |
| REV 01 | DATE: 15 APR 20 | PER CN-101697, ADDED NOTE FOR MX-1 | BY: MTR |

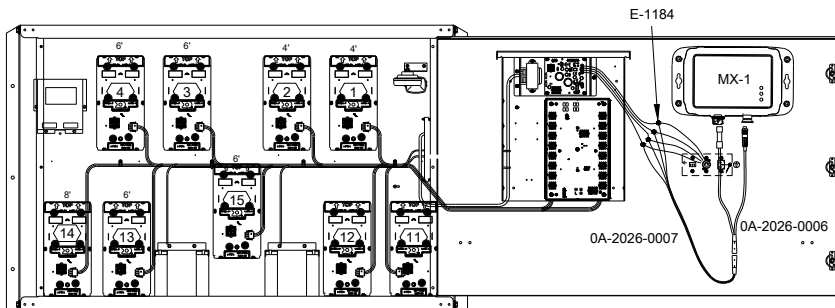
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| | | | |
|-----------------------------|---------------------------------|------------------------------|---------|
| PROJECT: OUTDOOR SCOREBOARD | | | |
| TITLE: SCHEMATIC; MS-2113 | | | |
| DATE: 24 JAN 19 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV |
| SCALE: NONE | DO NOT SCALE DRAWING | | 02 |
| DESIGN: HBONER | JOB NO. P2026 | FUNC. TYPE - SIZE R - 03 - B | 4107359 |
| DRAWN: MRUFER | | | |

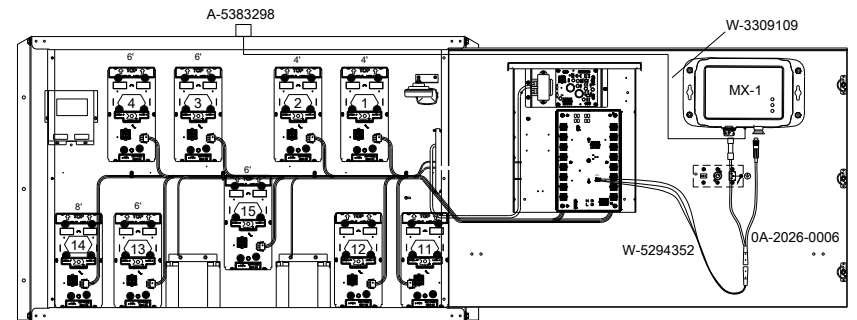
MX-1 INSTALLED OUTSIDE OF SCOREBOARD



MX-1 INSTALLED INSIDE OF SCOREBOARD ON LEGACY PRODUCT.

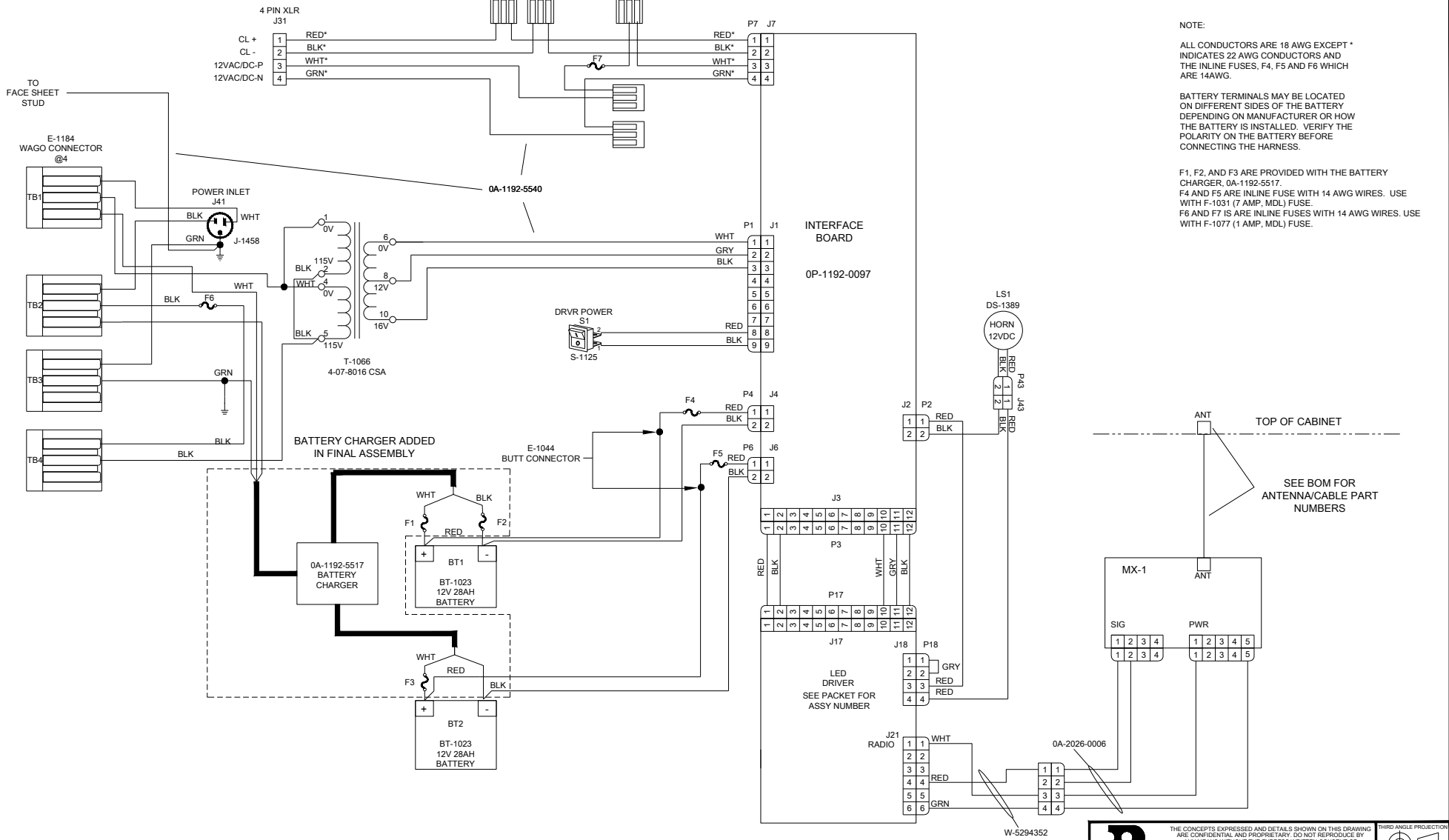


MX-1 INSTALLED INSIDE OF SCOREBOARD (0A-1192-5527 ONLY)



| | | | | |
|--|---------------------------------|---|---------|-----|
| | | <small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2019 DAKTRONICS, INC. (USA)</small> | | |
| PROJECT: MX-1 BOX ASSEMBLY | | | | |
| TITLE: MX-1 INSTALLATION OPTIONS ON MS-2113 | | | | |
| DATE: 24 JAN 19 | DIM UNITS: INCHES [MILLIMETERS] | | SHEET | REV |
| SCALE: NONE | DO NOT SCALE DRAWING | | | 01 |
| DESIGN: HBONER | JOB NO. P2026 | FUNC. TYPE - SIZE R - 03 - B | 4107389 | |
| DRAWN: MRUFER | | | | |

| | | | |
|--------|-----------------|---|---------|
| REV 01 | DATE: 03 JUN 24 | PER CN-179898, ADDED 0A-1192-5527 MX 1 INTERNAL OPTION. | BY: TBS |
|--------|-----------------|---|---------|

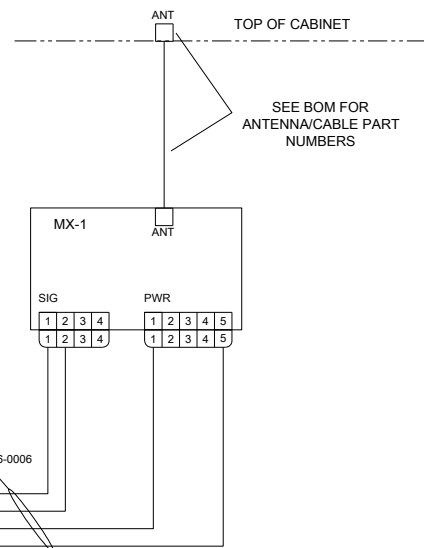


NOTE:

ALL CONDUCTORS ARE 18 AWG EXCEPT * INDICATES 22 AWG CONDUCTORS AND THE INLINE FUSES, F4, F5 AND F6 WHICH ARE 14AWG.

BATTERY TERMINALS MAY BE LOCATED ON DIFFERENT SIDES OF THE BATTERY DEPENDING ON MANUFACTURER OR HOW THE BATTERY IS INSTALLED. VERIFY THE POLARITY ON THE BATTERY BEFORE CONNECTING THE HARNESS.

F1, F2, AND F3 ARE PROVIDED WITH THE BATTERY CHARGER, 0A-1192-5517.
 F4 AND F5 ARE INLINE FUSE WITH 14 AWG WIRES. USE WITH F-1031 (7 AMP, MDL) FUSE.
 F6 AND F7 IS ARE INLINE FUSES WITH 14 AWG WIRES. USE WITH F-1077 (1 AMP, MDL) FUSE.



| | | | | |
|---|---------------------------------|---|------------|--|
| | | <small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT © 2022 DAKTRONICS, INC. USA</small> | | |
| PROJECT: OUTDOOR SCOREBOARD | | | | |
| TITLE: SCHEMATIC, MS-2113, W/ MX-1 | | | | |
| DATE: 21 JUL 23 | DIM UNITS: INCHES [MILLIMETERS] | SHEET | REV | |
| SCALE: NONE | DO NOT SCALE DRAWING | | 00 | |
| DESIGN: JLAIRD | JOB NO. P1920 | PLNC - TYPE - SIZE | R - 03 - B | |
| DRAWN: JLAIRD | | | 5303731 | |

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B Daktronics Warranty & Limitation of Liability

This section includes the Daktronics Warranty & Limitation of Liability statement (SL-02374).

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DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

This Warranty and Limitation of Liability (the “Warranty”) sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser and End User agree to be bound by and accept these terms and conditions. Unless otherwise defined herein, all terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

DAKTRONICS WILL ONLY BE OBLIGATED TO HONOR THE WARRANTY SET FORTH IN THESE TERMS AND CONDITIONS UPON RECEIPT OF FULL PAYMENT FOR THE EQUIPMENT

1. Warranty Coverage.

- A. Daktronics warrants to the original end user (the “End User”, which may also be the Purchaser) that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of one (1) year (the “Warranty Period”). The Warranty Period shall commence on the earlier of: (i) four weeks from the date that the Equipment leaves Daktronics’ facility; or (ii) Substantial Completion as defined herein. The Warranty Period shall expire on the first anniversary of the commencement date.

“Substantial Completion” means the operational availability of the Equipment to the End User in accordance with the Equipment’s specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment
- B. Daktronics’ obligation under this Warranty is limited to, at Daktronics’ option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment’s specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. This Warranty does not include on-site labor charges to remove or install these components. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by Daktronics.
- C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. All such items shall be shipped by End User DDP Daktronics designated facility per Incoterms® 2020. If returned Equipment is repaired or replaced under the terms of this Warranty, Daktronics will prepay ground transportation charges back to End User and shall ship such items DDP End User’s designated facility per Incoterms® 2020; otherwise, End User shall pay transportation charges to return the Equipment back to the End User and such Equipment shall be shipped Ex Works Daktronics designated facility per Incoterms® 2020. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. End User shall pay any upgraded or expedited transportation charges
- D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend the Warranty Period.
- E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a “Defect” shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, “Defects” are defined as LED pixels that cease to emit light. Unless otherwise expressly provided, this Warranty does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Notwithstanding the foregoing, in no event does this Warranty include LED pixel degradation caused by UV light. This Warranty does not provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS WARRANTY, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, DAKTRONICS DISCLAIMS ANY AND ALL OTHER PROMISES, REPRESENTATIONS AND WARRANTIES APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ACCURACY OR QUALITY OF DATA. OTHER ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY DAKTRONICS, ITS AGENTS OR EMPLOYEES, SHALL NOT CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY.

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

This Warranty does not impose any duty or liability upon Daktronics for any:

- A. damage occurring at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, End User assumes all risk of loss or damage, agrees to use any shipping containers that might be provided by Daktronics, and to ship the Equipment in the manner prescribed by Daktronics;
- B. damage caused by: (i) the improper handling, installation, adjustment, use, repair, or service of the Equipment, or (ii) any physical damage which includes, but is not limited to, missing, broken, or cracked components resulting from non-electrical causes;

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

altered, scratched, or fractured electronic traces; missing or gauged solder pads; cuts or clipped wires; crushed, cracked, punctured, or bent circuit boards; or tampering with any electronic connections, provided that such damage is not caused by personnel of Daktronics or its authorized repair agents;

- C. damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse; (ii) improper power including, without limitation, a failure or sudden surge of electrical power; (iii) improper air conditioning, humidity control, or other environmental conditions outside of the Equipment's technical specifications such as extreme temperatures, corrosives and metallic pollutants; or (iv) any other cause other than ordinary use;
- D. damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance, or any other cause beyond Daktronics' reasonable control;
- E. failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;
- F. statements made about the product by any salesperson, dealer, distributor or agent, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by End User and are not part of the contract of sale;
- G. damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics;
- H. replenishment of spare parts. In the event the Equipment was purchased with a spare parts package, the parties acknowledge and agree that the spare parts package is designed to exhaust over the life of the Equipment, and as such, the replenishment of the spare parts package is not included in the scope of this Warranty;
- I. security or functionality of the End User's network or systems, or anti-virus software updates;
- J. performance of preventive maintenance;
- K. third-party systems and other ancillary equipment, including without limitation front-end video control systems, audio systems, video processors and players, HVAC equipment, batteries and LCD screens;
- L. incorporation of accessories, attachments, software or other devices not furnished by Daktronics; or
- M. paint or refinishing the Equipment or furnishing material for this purpose.

3. Limitation of Liability

- A. Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.
- B. It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any claims asserting or based on (a) loss of use of the facility or equipment; lost business, revenues, or profits; loss of goodwill; failure or increased cost of operations; loss, damage or corruption of data; loss resulting from system or service failure, malfunction, incompatibility, or breaches in system security; or (b) any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, injury to property or any damages or sums paid to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise
- C. In no event shall Daktronics be liable for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the Purchase Price of the Equipment. The End User's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4. Assignment of Rights

- A. The Warranty contained herein extends only to the End User (which may be the Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

5. Governing Law; Election of Remedies

- A. The rights and obligations of the parties under this Warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. The parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce each of the parties' rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.
- B. Any dispute, controversy or claim arising from or related to this Warranty, the parties shall first attempt to settle through negotiations. In the event that no resolution is reached, then such dispute, controversy, or claim shall be resolved by final and binding arbitration under the Rules of Arbitration of the International Chamber of Commerce. The language of the arbitration

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

shall be English. The place of the arbitration shall be Sioux Falls, SD. A single arbitrator selected by the parties shall preside over the proceeding. If a single arbitrator cannot be agreed upon by the parties, each party shall select an arbitrator, and those arbitrators shall confer and agree on the appointed arbitrator to adjudicate the arbitration. The arbitrator shall have the power to grant any provisional or final remedy or relief that it deems appropriate, including conservatory measures and an award of attorneys' fees. The arbitrator shall make its decisions in accordance with applicable law. By agreeing to arbitration, the Parties do not intend to deprive any court of its jurisdiction to issue a pre-arbitral injunction, pre-arbitral attachment, or other order in aid of arbitration proceedings and the enforcement of any award. Without prejudice to such provisional remedies as may be available under the jurisdiction of a court, the arbitrator shall have full authority to grant provisional remedies and to direct the Parties to request that any court modify or vacate any temporary or preliminary relief issued by such court, and to award damages for the failure of any Party to respect the arbitrator's orders to that effect.

6. Availability of Extended Service Agreement

- A. For End User's protection, in addition to that afforded by the warranties set forth herein, End User may purchase extended warranty services to cover the Equipment. The Extended Service Agreement, available from Daktronics, provides for electronic parts repair and/or on-site labor for an extended period from the date of expiration of this warranty. Alternatively, an Extended Service Agreement may be purchased in conjunction with this Warranty for extended additional services. For further information, contact Daktronics Customer Service at 1-800-DAKTRONics (1-800-325-8766).

Additional Terms applicable to sales outside of the United States

The following additional terms apply **only** where the installation site of the Equipment is located outside of the United States of America.

1. In the event that the installation site of the Equipment is in a country other than the U.S.A., then, notwithstanding Section 5 of the Warranty, where the selling entity is the entity listed in Column 1, then the governing law of this Warranty is the law of the jurisdiction listed in the corresponding row in Column 2 without regard to its conflict of law principles. Furthermore, if the selling entity is an entity listed in Column 1, then the place of arbitration is listed in the corresponding row in Column 3.

| Column 1 (Selling Entity) | Column 2 (Governing Law) | Column 3 (Location of Arbitration) |
|----------------------------------|--|---------------------------------------|
| Daktronics, Inc. | The state of Illinois | Chicago, IL, U.S.A. |
| Daktronics Canada, Inc. | The Province of Ontario, Canada | Toronto, Ontario, Canada |
| Daktronics UK Ltd. | England and Wales | Bristol, UK |
| Daktronics GmbH | The Federal Republic of Germany | Wiesbaden, Germany |
| Daktronics Hong Kong Limited | Hong Kong, Special Administrative Region of the P.R.C. | Hong Kong SAR |
| Daktronics Shanghai Co., Ltd. | The Peoples Republic of China | Shanghai, P.R.C. |
| Daktronics France, SARL | France | Paris, France |
| Daktronics Japan, Inc. | Japan | Tokyo, Japan |
| Daktronics International Limited | Macau, Special Administrative Region of the P.R.C. | Macau SAR |
| Daktronics Australia Pad Ltd | Australia | Sydney, Australia |
| Daktronics Singapore Pte. Ltd | Singapore | Singapore |
| Daktronics Brazil LTDA | Brazil | São Paulo, Brazil |
| Daktronics Spain S.L.U. | Spain | Madrid, Spain |
| Daktronics Belgium N. V | Belgium | Kruikeke, Belgium |
| Daktronics Ireland Co. Ltd. | Ireland | Dublin, Ireland |

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