

CR-2004 Multi-Section Cricket Scoreboard

Display Manual

ED-16242

Rev 1 – 4 March 2011

DAKTRONICS

Please fill in the information below to use for reference when calling Daktronics for assistance.

Display Serial No. _____

Display Model No. _____

Date Installed _____

DAKTRONICS, INC.

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Section 1: Introduction

This manual explains the installation of Daktronics multi-section cricket scoreboard model CR-2004 and provides details for maintenance and troubleshooting. For additional information regarding the safety, installation, operation, or service of this system, refer to the telephone numbers listed in **Section 5.10**. This manual is not specific to a particular installation.

Important Safeguards:

- Please read and understand all instructions before beginning the installation process.
- Do not drop control equipment or allow it to get wet.
- Do not disassemble control equipment or electronic controls of the display; failure to follow this safeguard will make the warranty null and void.
- Disconnect display power when not in use or when servicing.
- Disconnect display power before servicing power supplies to avoid electrical shock. Power supplies run on high voltage and may cause physical injury if touched while powered.
- Do not modify the scoreboard structure or attach any panels or coverings to the scoreboard without the express written consent of Daktronics, Inc.

Project-specific information takes precedence over any other general information found in this manual.

1.1 Resources

Figure 1 illustrates a Daktronics drawing label. The drawing number is located in the lower-right corner of a drawing. This manual refers to drawings by listing the last set of digits and the letter preceding them. In the example, the drawing would be referred to as **Drawing C-325405**.

THE CONCEPTS EXPRESSED AND DETAILS SHOWN IN THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY, WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DAKTRONICS UNIVERSITY			
TITLE: SYSTEM RISER DIAGRAM			
DES. BY: AORMESH		DRAWN BY: AORMESH	
		DATE: 15 JAN 08	
REVISION	APPR BY-	14963-R01 C-325405	
00	SCALE: NONE		

Figure 1: Daktronics Drawing Label

Reference Drawing:

System Riser Diagram **Drawing C-325405**

Daktronics identifies manuals by the DD or ED number located on the cover page of each manual. For example, this manual would be referred to as **ED-16242**.

1.2 Daktronics Nomenclature

Serial and model numbers can be found on the ID label on the display as shown in **Figure 2**.

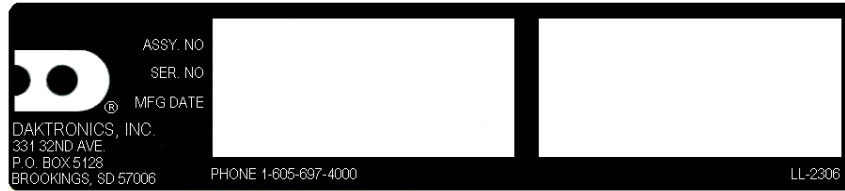


Figure 2: Scoreboard ID Label

Please list the model number, display serial number, and the date this display became operational in the blanks provided on the second page of this manual. When calling Daktronics customer service, please have this information available to ensure the request is serviced as quickly as possible.

Most components within this display carry a white label that lists the part number of the unit. If a component is not found in the Replacement Parts List in **Section 5.9**, use the label to order a replacement. **Figure 3** illustrates a typical label. The part number is in bold.

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	M-XXX
Fabricated metal assembly	0S-XXXXXX
Specially ordered part	PR-XXXXX-X

Accessory Labels	
Component	Label
Termination block for power or signal cable	<u>TBXX</u>
Grounding point	<u>EXX</u>
Power or signal jack	<u>JXX</u>
Power or signal plug for the opposite jack	<u>PXX</u>

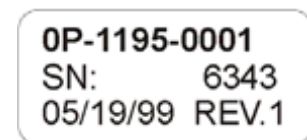


Figure 3: Typical Label

Following the Replacement Parts List is the Daktronics Exchange Policy and the Repair & Return Program. Refer to these instructions if replacing or repairing any display component.

1.3 Model Number

Daktronics scoreboards are differentiated by their model numbers and two-letter prefixes for each sport. Most Daktronics scoreboards also carry a two-number suffix that refers to the type of power supply and digit color. Refer to the following tables:

CR	Cricket
----	---------

-11	120 V, with red digits
-21	120 V, with amber digits
-12	240 V, with red digits
-22	240 V, with amber digits

1.4 Scoreboard Controllers

If the CR-2004 is controlled by the Total Cricket Scorer software, refer to the quick guide in **Appendix B**.

While the CR-2004 cricket scoreboard is designed for use with third-party computer software, it is possible to control this scoreboard (with limited functionality) using an All Sport® 5000 series control console. This console uses keyboard overlays (sport inserts) to control numerous sports and scoreboard models. Refer to the following manual for operating instructions:

- **All Sport 5000 Series Control Console Operation Manual (ED-11976)**

This control console manual is available online at www.daktronics.com/manuals.

1.5 Product Safety Approval

Daktronics outdoor scoreboards are ETL listed and tested to CSA standard for outdoor use. Contact Daktronics with any questions regarding testing procedures.

Section 2: Specifications

The chart on the following pages details all of the mechanical specifications, circuit specifications and power requirements for each display in this manual. Models are listed in alphanumeric order.

Notes:

- 1) Display requires a 240 V AC, 15 A circuit. Displays with a 120 V A C power requirement are also available.
- 2) Signal wire must be minimum of 22 AWG with shield. Daktronics recommends W-1234.
- 3) Message Center LEDs are the same color as the LED digits on the scoreboard.

Model	Number of Sections	Dimensions: Height (H), Width (W), Depth (D)	Weight	Watts	Amps 240 / 120 V AC	Driver # & Address
CR-2004	4 Total	H 23'-0", W 19'-8", D 8" (7010 mm, 5994 mm, 203 mm)	1830 lb (830 kg)	1900 W	7.9 A / 15.8 A	(see below)
	Top (CR-2005)	H 6'-4", W 19'-8", D 8" (1930 mm, 5994 mm, 203 mm)	500 lb (227 kg)			A1 15 TNMC 221
	2 nd from Top (CR-2006)	H 5'-6", W 19'-8", D 8" (1676 mm, 5994 mm, 203 mm)	440 lb (200 kg)			A1 16 A2 17
	3 rd from Top (CR-2007)	H 6'-8", W 19'-8", D 8" (2032 mm, 5994 mm, 203 mm)	530 lb (240 kg)			A1 18 A2 19 A3 20 TNMC 223
	Bottom (CR-2008)	H 4'-6", W 19'-8", D 8" (1372 mm, 5994 mm, 203 mm)	360 lb (163 kg)			A1 21 A2 22 TNMC 222

Section 3: Mechanical Installation

Mechanical installation consists of installing concrete footing and steel beams and mounting the scoreboard and accompanying ad panels to the beams.

3.1 Footings & Beams

Drawing B-268714 in **Appendix A** shows the recommended number of beams and spacing between them.

The column and footing size dimensions are to assist with estimating installation costs. They are estimates only and are not intended for actual construction purposes. Be sure that the installation complies with local building codes and is suitable for the particular soil and wind conditions. The columns, footings, and all connection details must be designed and certified by a professional engineer licensed to practice in the state of the installation.

Note: Daktronics does not assume any liability for any installation derived from the information provided in this manual or installations designed and installed by others.

3.2 Lifting the Scoreboard

Larger scoreboard sections and message centers are shipped equipped with eyebolts used to lift them. The eyebolts are located along the top of the cabinet for each scoreboard section. Daktronics scoreboards use $\frac{1}{2}$ " and $\frac{5}{8}$ " shoulder-type eyebolts mounted to a $\frac{1}{8}$ " aluminum plate or steel nut plate.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Spreader bars ensure the force on the eyebolts remains straight up, minimizing lifting stress.

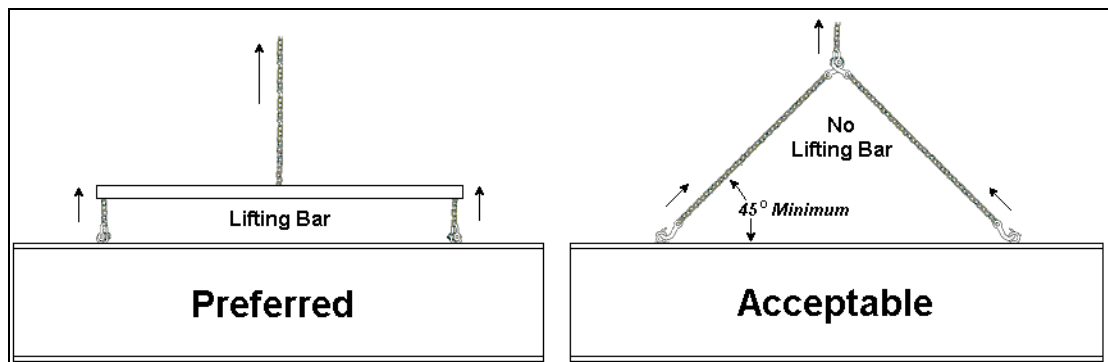


Figure 4: *Lifting Methods*

Figure 4 illustrates the preferred scoreboard lifting method on the left and an acceptable alternative lifting method on the right. When lifting the display:

- Use a spreader bar if possible.
- Use every lifting point provided.

Cables and chains attached to the eyebolts and directly to a center lifting point, as shown in the right-hand example in **Figure 4**, can create a dangerous lateral force on the eyebolts and may cause the eyebolts to fail. The smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift it. If this method must be used, ensure a minimum angle between the chain and scoreboard of at least 45 degrees.

Do NOT attempt to lift the display if the angle is less than 45 degrees. Exceeding load angles or weight limits could cause the bolts in the scoreboard cabinet to buckle, resulting in serious damage to the scoreboard or injury to personnel. Also, loads should be applied directly in the plane of the eyebolt as shown in **Figure 5**.

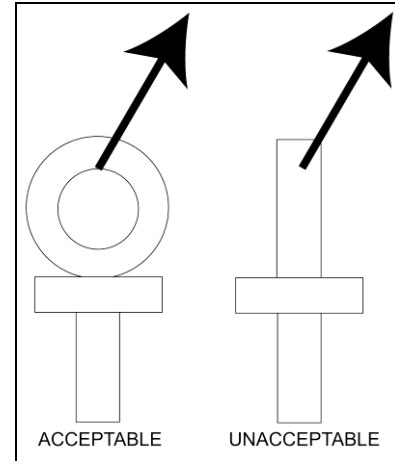


Figure 5: Eyebolt Plane Load

Note: Daktronics assumes no liability for damages resulting from incorrect setup or lifting methods. Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts.

If installers remove the eyebolts, plug the holes with bolts and the rubber washers that are used with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Also inspect the top and sides of the display for any other holes or openings that may allow moisture to enter the display and plug and seal those openings.

3.3 Scoreboard Mounting

In typical multi-section installations, the lower scoreboard is installed first and secured to the support beams. The next section is then placed atop or above the lower section and attached to the beams. There are cables extending from the top of the lower sections. Guide these cables into the holes in the bottom of the upper sections for later connection.

Note: Refer to **Section 4.5** for more information on the power/signal connections between sections.

The CR-2004 scoreboard is typically mounted in one of two ways:

- 1) clamped to vertical beams using mounting angles and long, threaded rods
- 2) permanently welded to tubular horizontal supports.

Clamping to Verticals

An inverted channel mounting installation uses C-channels; clip angles; 1/2-13" threaded rods; and 1/2" square nuts, hex nuts, lock washers, and optional spacers. Refer to **Figure 6** and **Drawing A-55101** in **Appendix A**.

Mount the scoreboard as follows:

1. Place the C-channel against the upper and lower rear flanges of the scoreboard.
2. Use the width of the beam to determine the appropriate hole combination to use for the bolts. The bolts should be kept as close to the beam as possible.
3. With the C-channel as a template, use a 9/16" bit to drill holes in the upper and lower rear flanges of the scoreboard cabinet where the bolts will pass through.
4. Place the 1/2" square nuts inside the C-channel and thread the 1/2-13" rods through the C-channel, rear flange of the scoreboard cabinet, and spacer (if used).
5. Lift the scoreboard into position with the bolts still in place. Position the scoreboard at the front of the beams with the threaded rods extending from the rear flanges.
6. With the threaded rod straddling the beams, place mounting angles over each pair of bolts and secure with 1/2" lock washers and hex nuts.
7. Make final adjustments in the positioning of the scoreboard.
8. Make sure that the threaded rods are perpendicular to the scoreboard, and tighten all of the 1/2" hex nuts.

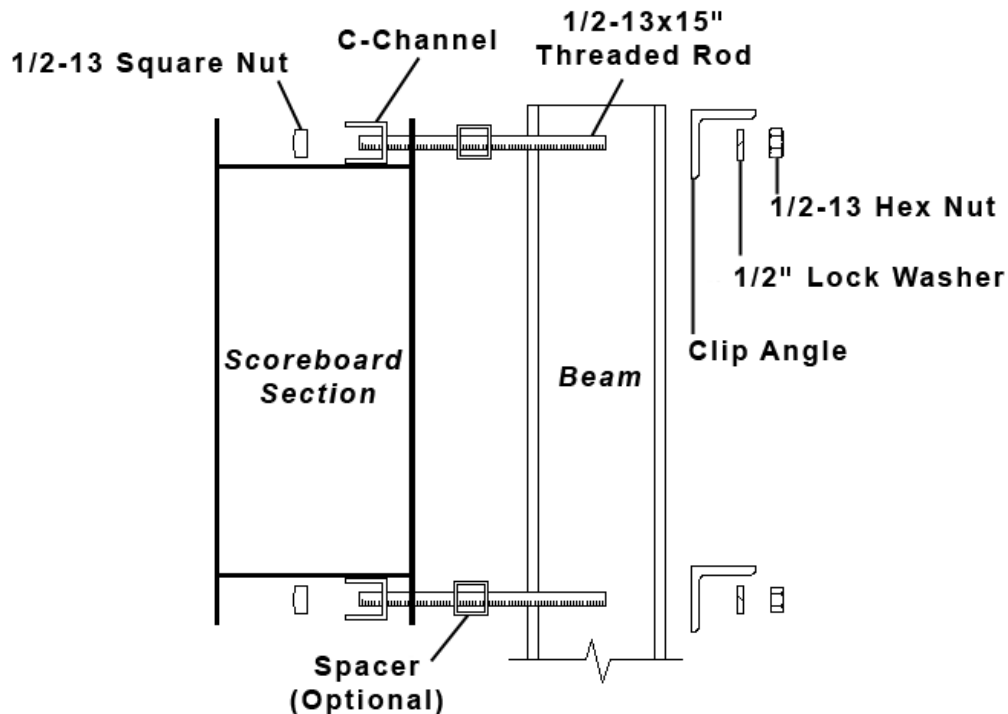


Figure 6: C-channel Mounting Method, Side View

Welding to Horizontals

Steel clip angles are first bolted to the back of each scoreboard section. These clip angles are then welded on three sides to a horizontal tube, which itself has been welded to the support beams. Refer to **Drawing B-268714** in **Appendix A** for suggested horizontal tube spacing.

Figure 7 and **Drawing A-83301** illustrate the mounting of the display to horizontal tubing.

1. Visually check the display structure before beginning the installation process.
 - Ensure that the structure will provide a straight and square mounting frame for the scoreboard/display.
 - Check to ensure the mounting frame will not give way at unsupported points after the scoreboard/display is mounted. If any problems are noted, take corrective action immediately.
2. Bolt the clip angles to the rear of the scoreboard sections with $\frac{1}{2}$ " hardware. **Drawing B-238471** shows recommended clip angle locations. **Refer to project-specific shop drawings for exact locations of the clip angles.**
3. Lift the display section into position. Refer to **Section 3.2**.
4. Adjust the clip angles as needed so that they are firmly against the horizontal tube. During the installation of the first section, carefully monitor the horizontal and vertical straightness of the display. If the mounting structure does not provide a straight or square mounting surface, it will be necessary to place shims between the display section and the mounting surface to ensure straightness.
5. Weld the three edges of each clip angle that are in contact with the horizontal tube.

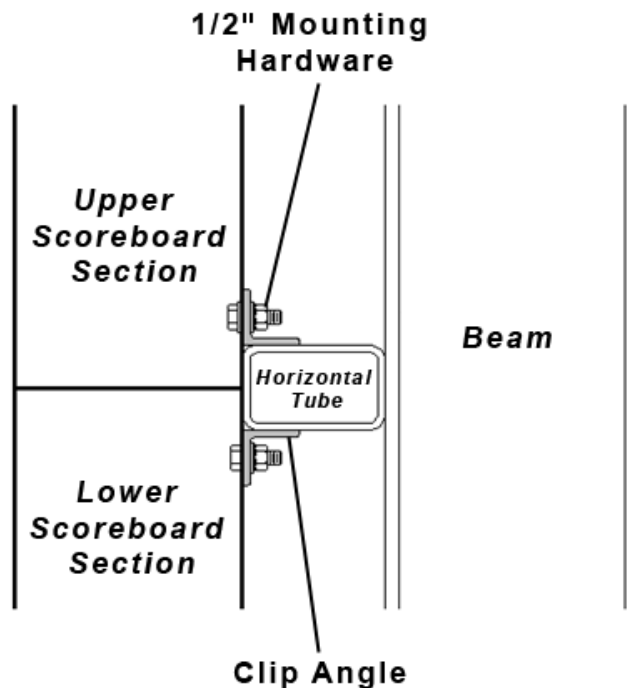


Figure 7: Scoreboard Mounting Detail, Side View

3.4 Ad Panel Mounting

The installation uses C-channels; clip angles; 1/2-13" threaded rods; and 1/2" square nuts, hex nuts, lock washers, and optional spacers similar to the clamping mounting method above. Refer to **Figure 8** and **Drawing A-52187** in **Appendix A**.

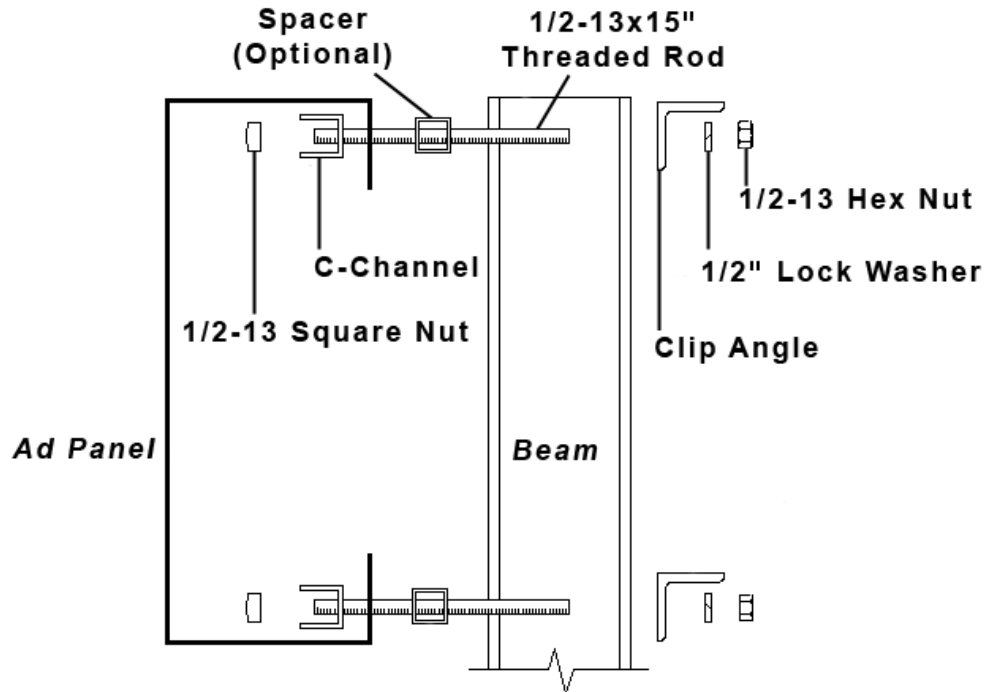


Figure 8: Ad Panel Mounting with C-channel, Side View

Mount the ad panel(s) as follows:

1. Use the width of the beam to determine which hole combination to use for the bolts. Be sure to keep the bolts as close to the beam as possible.
2. Using the clip angle as a template, use a $\frac{9}{16}$ " bit to drill holes in the upper and lower rear flange of the ad panel where the C-channel supports will be placed.
3. Position the C-channel *inside* the ad panel cabinet along the upper and lower rear flanges as shown in **Figure 8**.
4. Place 1/2" square nuts inside the channel and thread the 1/2-13" rods through the C-channel, rear flange of the ad panel, and spacer (if used).
5. Lift the ad panel into position with the rods still in place.
6. With the threaded rod straddling the beams, place mounting angles over the ends of each pair of bolts and secure with 1/2" lock washers and hex nuts.
7. Make final adjustments in the positioning of the ad panel.
8. Make sure that the threaded rods are perpendicular to the ad panel, and tighten all of the 1/2" hex nuts.

Some ad panels have back sheets that must be removed before the display can be installed. After marking and drilling holes in the upper and lower rear flanges of the ad panel, remove the back sheets above and below the hole locations. Position the C-channel inside the cabinet and attach the square nuts to the threaded rods as described above. Be sure to replace the back sheets after placing the square nuts inside the channel and threading the rods through the holes in both the upper and lower rear flanges.

3.5 Scoreboard Protective Devices

Daktronics makes optional protective devices, including screens and netting, to help prevent damage to the scoreboard due to normal ball impacts.

Note: Some users install devices to protect the scoreboard from projectiles. Scoreboard protection devices not provided by Daktronics must be approved by Daktronics prior to installation. Failure to follow this approval procedure will void the scoreboard warranty.

Section 4: Electrical Installation

CAUTION: Only qualified individuals should terminate power and signal cable and access the electrical components of the display and its associated equipment. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes. Daktronics engineering staff must approve all changes or the warranty will be void.

4.1 Installation Overview

The diagram shown in **Figure 9** illustrates a typical wired setup between a multi-section cricket scoreboard and control system. Daktronics part numbers are shown in parentheses.

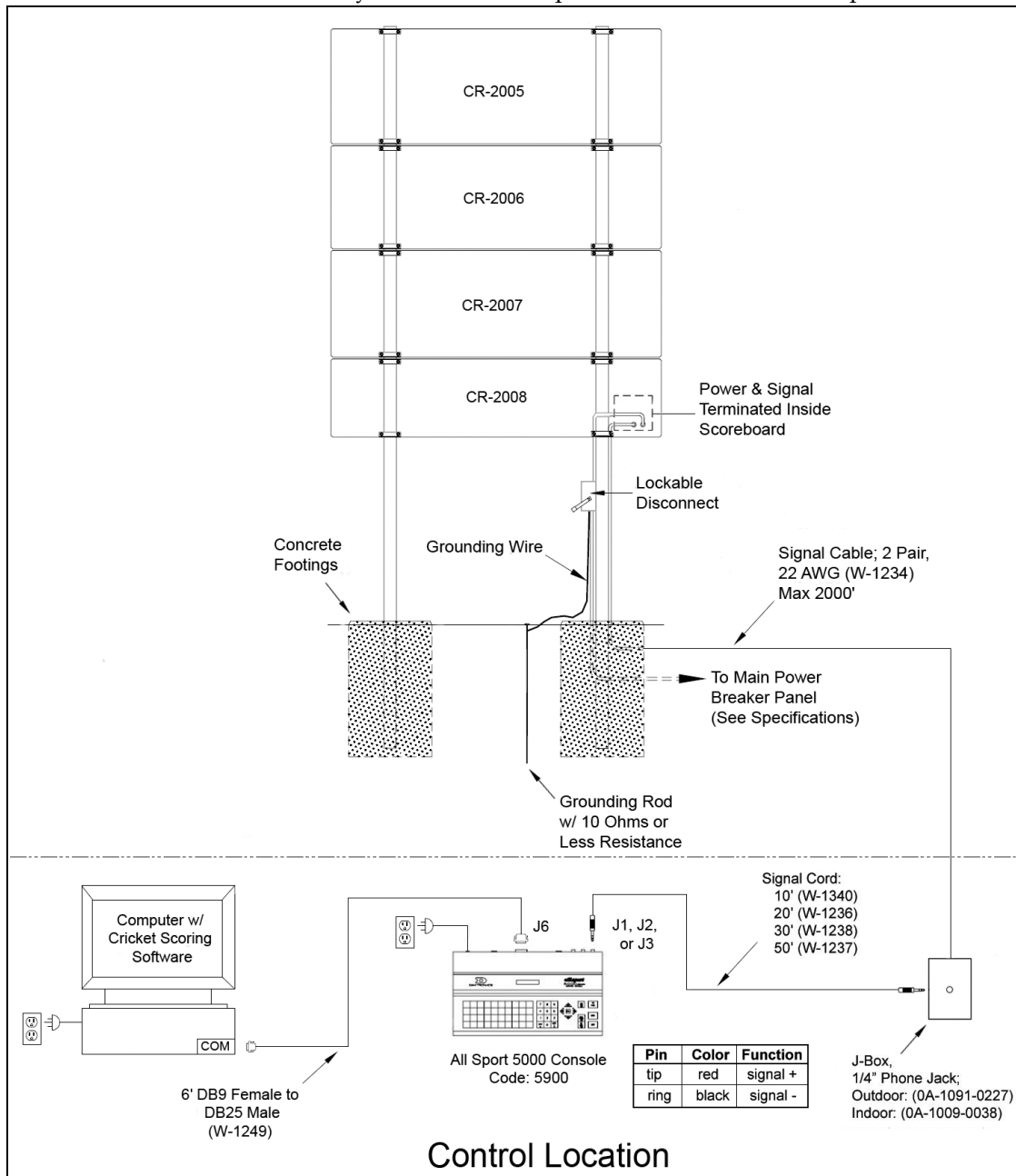


Figure 9: Wired Installation

The diagram shown in **Figure 10** illustrates a typical wireless setup between a multi-section cricket scoreboard and control system. Daktronics part numbers are shown in parentheses.

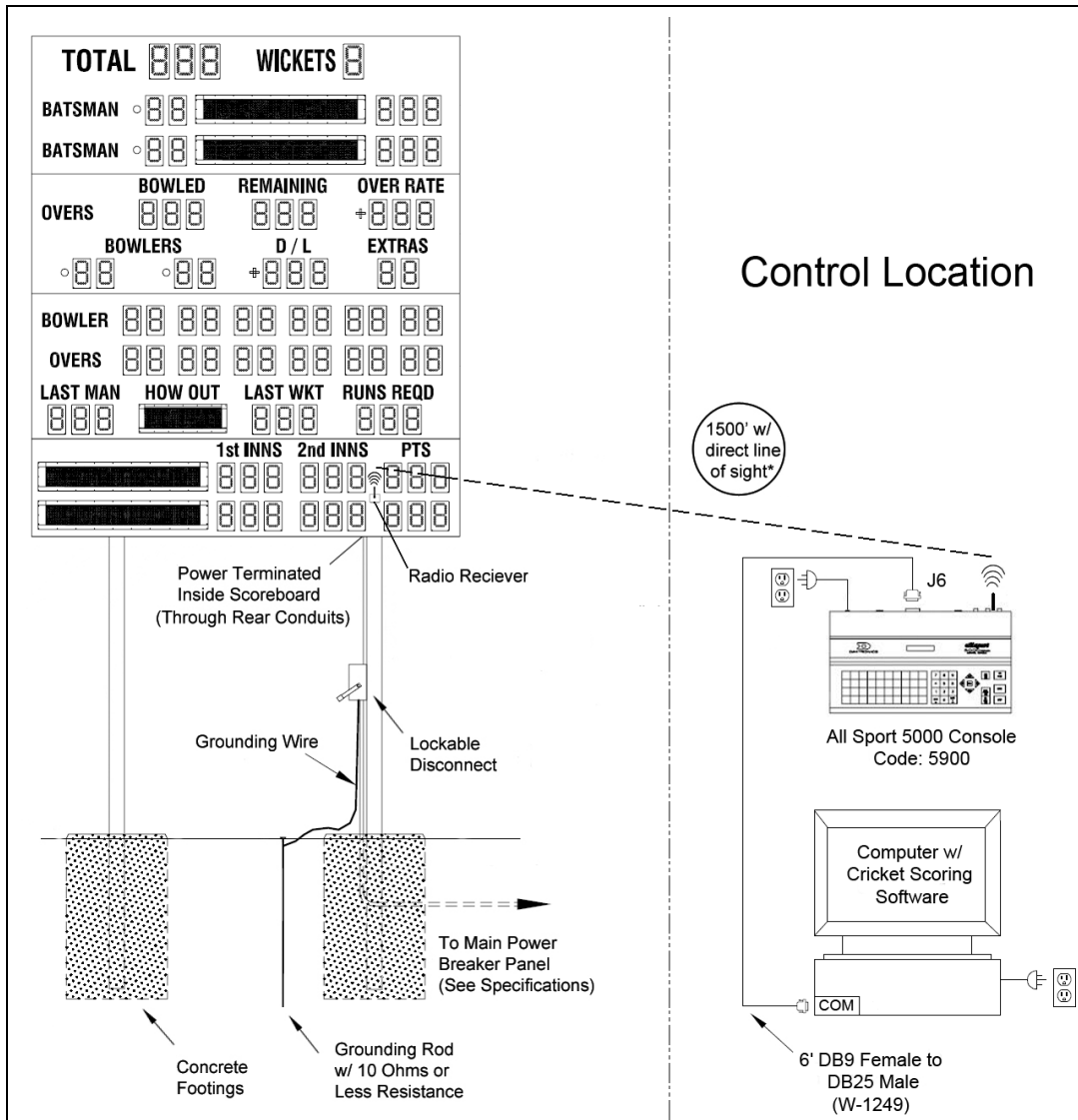


Figure 10: Wireless Installation

All Sport Backup

If the scoring computer becomes inoperable, the All Sport 5000 can be used as a temporary backup by changing the sport code to **5590**.

Note: When operating the CR-2004 directly from the All Sport 5000 controller, the following information cannot be entered and will not display:

- **BOWLED, REMAINING, & OVER RATE**
- **D/L**
- **BOWLER & OVERS 1-6**
- **HOW OUT**
- **1st INNS, 2nd INNS, & PTS for both teams**
- **Both team names**

4.2 Power

Correct power installation is imperative for proper display operation. The subsections that follow give details of display power installation. Only qualified individuals should attempt to complete the electrical installation; untrained personnel should not attempt to install these displays or any of the electrical components. Improper installation could result in serious damage to the equipment or injury to personnel.

The scoreboards in this manual require a dedicated 240 V or 120 V circuit for incoming power (refer to the Specifications in **Section 2**).

WARNING: It is critical that 120 V scoreboard circuits be fused at 15 A and that all conductors used must be designed to pass a 15 A current in normal operation. For 240 V scoreboards, consult local electrical codes. Failure to meet wiring and overcurrent protection device requirements will void the scoreboard warranty.

Grounding

The display must be properly grounded according to local and national codes or the warranty will be void. Proper grounding is necessary for reliable equipment operation and protects the equipment from damaging destructive disturbances and lightning.

Daktronics recommends a resistance-to-ground of 10 ohms or less. The electrical contractor performing the electrical installation can verify ground resistance. Daktronics Sales and Service personnel can also provide this service.

The display system must be earth-ground. The material for an earth-ground electrode differs from region to region and may vary according to conditions present at the site. Consult local and national electrical codes.

Daktronics does not recommend using the support structure as an earth-ground electrode; concrete, primer, corrosion, and other factors make the support structure a poor ground.

Note: The support structure may be used as an earth-ground electrode only if designed to do so. A qualified inspector must approve the support structure and grounding methods.

There are two types of power installation: installation with ground and neutral conductors provided, and installation with only a neutral conductor provided. These two power installations differ slightly, as described in the following paragraphs:

Installation with Ground and Neutral Conductors Provided

For this type of installation, the power circuit must contain an isolated earth-ground conductor. In this circumstance, do not connect neutral to ground at the disconnect or at the display as this would violate electrical codes and void the warranty.

Use a disconnect so that all ungrounded lines can be disconnected. The National Electrical Code requires the use of a lockable power disconnect within sight of or at the display.

Installation with Only a Neutral Conductor Provided

Installations where no grounding conductor is provided must comply with Article 250-32 of the National Electrical Code. If the installation in question meets all of the requirements of Article 250-32, the following guidelines must be observed:

- Connect the grounding electrode cable at the local disconnect, never at the display driver/power enclosure.
- Use a disconnect that opens all of the ungrounded phase conductors.

Connection

Power cabling is routed into the scoreboard from the rear through plastic plugs for conduit connection. If no conduit knockouts are available, installers will have to drill holes into the back sheet of the scoreboard to allow entrance of power wires.

All power wiring terminates at the enclosure shown in **Figure 12**, located in the lower-right corner of the scoreboard (when viewed from the front). Refer to **Drawing A-327249** in **Appendix A** for precise power termination location.

1. Route the power cables via conduit into rear of scoreboard.
2. Look for a warning label similar to **Figure 11** to locate the appropriate access panel to the power breaker enclosure.
3. Loosen the screws or latches to open the access panel.
4. Route the power cables up through the bottom of the power enclosure.
5. Use a Philips screwdriver to loosen the two screws, and then lift the enclosure cover up and off the keyholes.
6. Connect the power cables as follows:
 - Neutral (white) wire to NEUT.
 - Live wire to LINE 1 (black)
 - Live wire to LINE 2 (red) – 120 V installations only
 - Ground wire (green/yellow) to the grounding buss bar, E41
7. Reattach the metal enclosure cover and secure the access panel.



Figure 11: Power Warning Label

Note: If a power receptacle is needed to operate the control console at the scoreboard for troubleshooting, Daktronics recommends that an installation electrician provides a 240 or 120 V outlet close to the disconnect box specifically for this purpose.

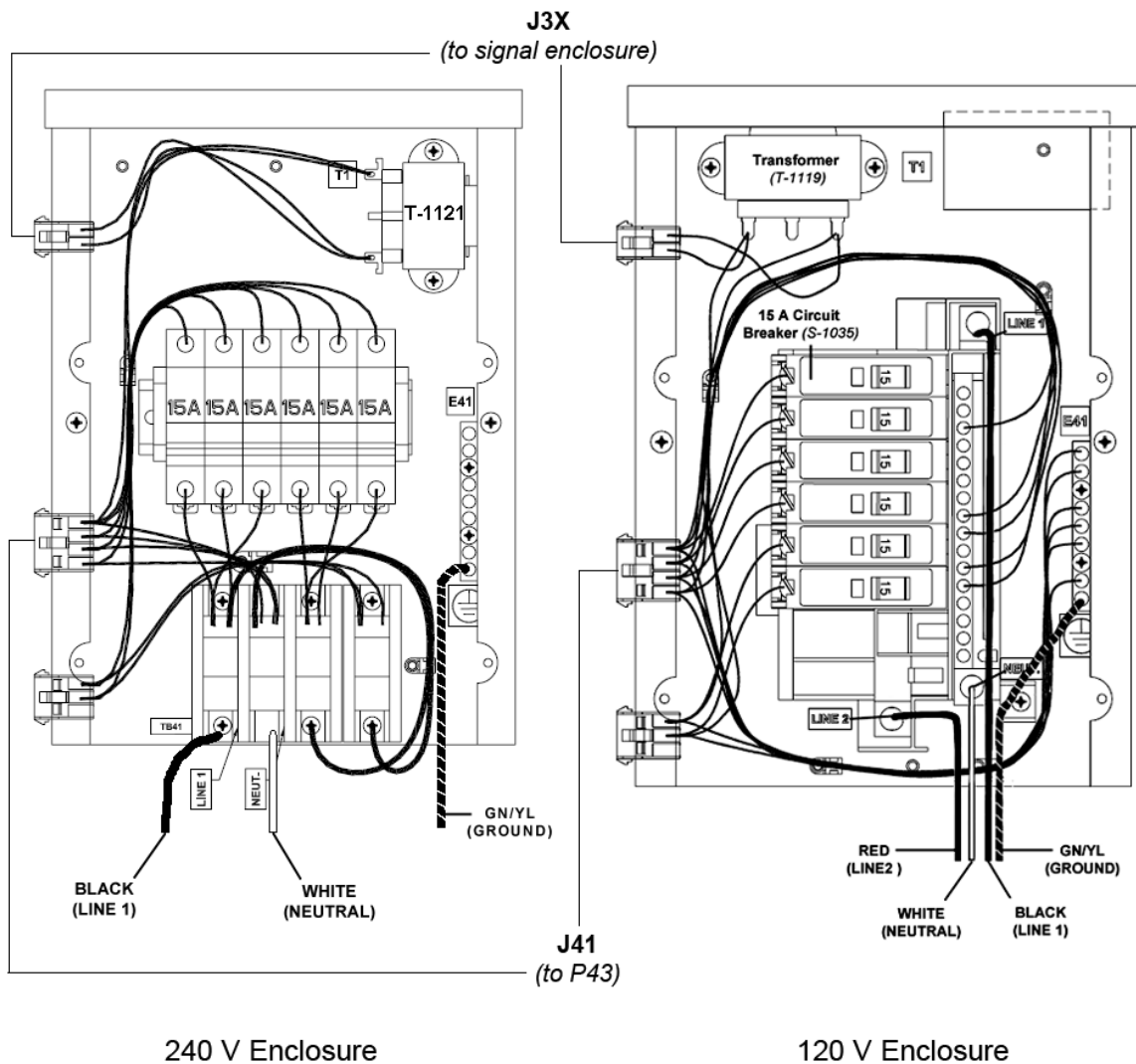


Figure 12: Power Enclosures w/ Covers Removed (240 V & 120 V)

4.3 Power-On Self-Test (POST)

The scoreboard performs a self-test each time that power is turned on and the control console is powered off or not attached to the scoreboard. If the control console is attached and powered on, the self-test does not run, and data from the control console is displayed on the scoreboard after a brief period of time. Each scoreboard self-test pattern will vary depending on the scoreboard model, the number of drivers and types of digits. Figure 13 shows an example of the LED bar test pattern that each digit performs.

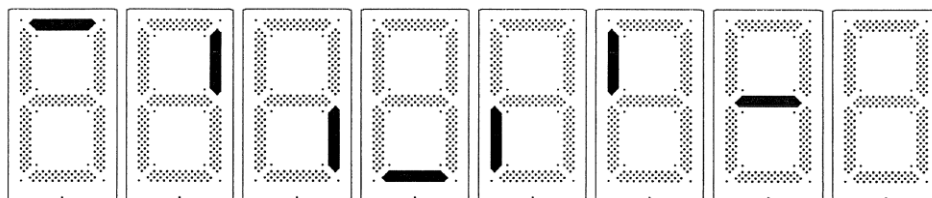


Figure 13: Digit Segment POST

Radio Settings

If a radio receiver is installed, the radio Broadcast and Channel settings will be displayed in on the scoreboard during the POST. These values must match the settings in the control console (refer to the manual listed in **Section 1.4**). Refer to **Section 5.6** for more information on radio installations.

4.4 Signal Connection

Signal cabling is routed into the scoreboard from the rear through plastic plugs for conduit connection. If no conduit knockouts are available, installers will have to drill holes into the back sheet of the scoreboard to allow entrance of power wires. Note that systems with radio control do not require external signal wiring to the display.

All signal wiring terminates at the enclosure shown in **Figure 14**, located in the lower-right corner of the scoreboard (when viewed from the front). Refer to **Drawing A-327249** in **Appendix A** for precise signal termination location.

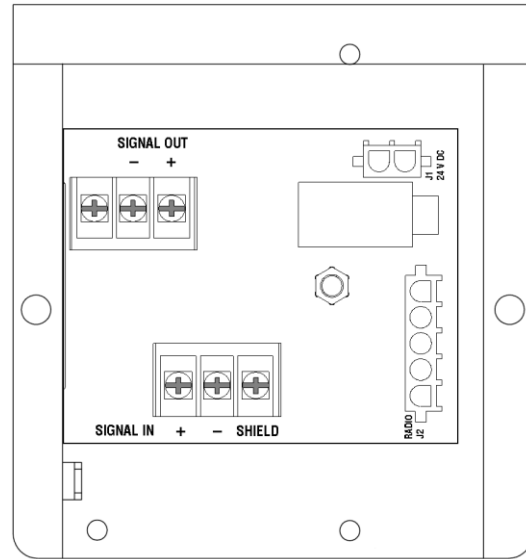


Figure 14: Signal Enclosure w/ Cover Removed

1. Route the signal cables via conduit into rear of scoreboard.
2. Look for a warning label similar to **Figure 11** to locate the appropriate access panel to the signal enclosure.
3. Loosen the screws or latches to open the access panel.
4. Route the signal cables up through the bottom of the signal enclosure.
5. Use a Philips screwdriver to loosen the two screws, and then lift the enclosure cover up and off the keyholes.
6. At the SIGNAL IN terminal block, connect the signal cables as follows:
 - Red signal wire to positive (+) terminal
 - Black signal wire to negative (-) terminal
 - Silver wire to SHIELD terminal
7. Reattach the metal enclosure cover and secure the access panel.
8. At the control location, connect a 9-pin female to 25-pin male cable (Daktronics part # W-1249) between the J6 jack on the back of the All Sport 5000 and an available serial (COM) port on the cricket scoring computer.

Note: Refer to **Appendix B** for more information on setting up the TCS software.

9. For wired setups, also connect a signal cord from the J-box into jack J1, J2, or J3 on the back of the All Sport 5000 controller.

For signal cable, Daktronics recommends, as a minimum, single-pair, shielded cable, 22 AWG (Daktronics part number W-1077). Two-pair shielded cable (part W-1234) is preferred.

Fiber Optic

Another common signal communication method is fiber optic cabling. A minimum cabling of multi-mode, 62.5/125 um, and 2-core fiber cable is recommended (Daktronics part number W-1242). In such installations, the signal enclosure shown in **Figure 14** will be replaced by a fiber J-box. This method also requires a signal converter between the All Sport console's scoreboard output and the fiber optic cable (not provided by Daktronics).

4.5 Power/Signal Connections Between Sections

Refer to **Drawing B-236615** in **Appendix A** for exact driver and power/signal interconnect cable locations.

1. On the lowest scoreboard section, open the appropriate access panel to locate the bundle of interconnect cable coming from the driver.

Note: Additional panels may be opened for easier access when routing the cable.

2. Route the interconnect cable through the hole in the top of the lower cabinet up into the hole in the bottom of the upper cabinet, and connect the J43 jack to the mating P43 plug coming off of one of the drivers.
3. Repeat steps 1-2 to connect the remaining scoreboard sections.

4.6 Lightning Protection

The use of a disconnect near the scoreboard to completely cut all current-carrying lines significantly protects the circuits against lightning damage. In order for this system to provide protection, the power must be disconnected when the scoreboard is not in use.

The control console should also be disconnected from power and from the signal junction box when the system is not in use. The same surges that may damage the scoreboard's driver can also damage the console's circuitry.

Section 5: Scoreboard Troubleshooting

IMPORTANT NOTES:

1. Always disconnect power before doing any repair work on the scoreboard.
2. Permit only qualified service personnel to access internal display electronics.
3. Disconnect power when not using the scoreboard.

For assistance in the maintenance of team name message centers (TNMCs) or other optional scoreboard message centers, refer to **Section 6** or the service manual that accompanies those units.

5.1 Troubleshooting Table

The table below lists potential problems with the scoreboard 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.

Many of the solutions offered below provide references to other sections within this manual or to supplemental product manuals with further detail on how to fix the problem.

If a problem occurs that is not listed or that cannot be resolved using the solutions in the following table, contact Daktronics using the information provided in **Section 5.10**.

Problem	Possible Cause	Solution/Items to Check
Scoreboard doesn't light and console doesn't work	No power to the scoreboard	Check that the main circuit breaker for the scoreboard is on.
		Check that the scoreboard is receiving the correct 240 or 120 V AC power (see Section 2).
	No power to console	Ensure the console is plugged into a 240 or 120 V AC power supply.
		Swap the console with one known to work correctly, and enter the proper sport code and/or radio settings to test. Replace console if necessary.
Scoreboard digits don't light, but console works	No wired signal from console	Check that the scoreboard is receiving the correct 240 or 120 V AC power (see Section 2).
		Check that the red DS2 LED on the driver lights up when sending commands from the computer or control console (see Section 5.5).
	No radio signal from console	Cycle power to the scoreboard and watch for radio receiver broadcast/channel settings (see Section 5.6).

Problem	Possible Cause	Solution/Items to Check
		Check that the green POWER and amber RADIO IN RANGE indicators on the radio receiver in the scoreboard light up when the control console is powered on (see Section 5.6). Keep the console between 20 to 1500 feet from the scoreboard.
		Move the console 20-30 feet from the scoreboard and test again. Verify that both the console and scoreboard antennae are securely tightened and in a vertical position.
		Replace the radio receiver.
	No signal to driver	Check that the scoreboard is receiving the correct 240 or 120 V AC power (see Section 2).
		Check that the red DS2 LED on the driver lights up when sending commands from the control console (see Section 5.5).
		Swap the driver with one known to work correctly and with the same part number to verify the problem. Replace if necessary (Section 5.5).
	No power to driver	Check that the green DS1 LED on the driver is always lit up when the scoreboard is powered on (see Section 5.5).
Scoreboard digits light, but not in the correct order	Incorrect sport code	Ensure the correct sport code is being used for the scoreboard model. Refer to the operation manual for the console being used (see Section 1.4).
	Incorrect driver address	Check that the scoreboard driver(s) are set to the correct address(es) (see Section 5.5).
Scoreboard digits light, console works, but no display on scoreboard	No wired signal from console	(See solution on previous page)
	No radio signal from console	(See solution on previous page)
	Bad/damaged field wiring	Check that the red DS2 LED on the driver lights up when sending commands from the control console (see Section 5.5).
Scoreboard works, but some LEDs always stay on	Short in digit or indicator circuit	Swap the digit or indicator with one known to work correctly to verify the problem. Replace if necessary (see Sections 5.4).

Problem	Possible Cause	Solution/Items to Check
Scoreboard works, but some LEDs do not light or they blink	Bad connection	Verify the Mate-N-Lok connector on the back of the digit circuit board is secure (see Section 5.2). Verify power/signal interconnect(s) between scoreboard sections properly connected (see Section 4.5)
	Bad digit or driver	Swap the digit/driver with one known to work correctly to verify the problem. Replace if necessary (see Sections 5.4 for digits or Section 5.5 for drivers).
Scoreboard works, but some digits do not light	Bad digit or driver	(see solution above)
	Incorrect sport code	(see solution on previous page)
	Incorrect driver address	(see solution on previous page)
	Wrong console controlling scoreboard	Another console's radio signal could be transmitting to the scoreboard. An example would be football and baseball scoreboards that are within 1500 feet of each other (see Section 5.6).
	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.

5.2 Component Access

All internal electronic components are reached by opening an access door or a digit panel on the display.

Digit panels are held in place on the scoreboard face by an offset flange across the top and by screws at the bottom, as shown in **Figure 15**.

To open a digit panel:

1. Hold the digit panel in place by putting hand pressure on it and remove the holding screws.
2. Carefully lift the panel away from the scoreboard, sliding it out and down.

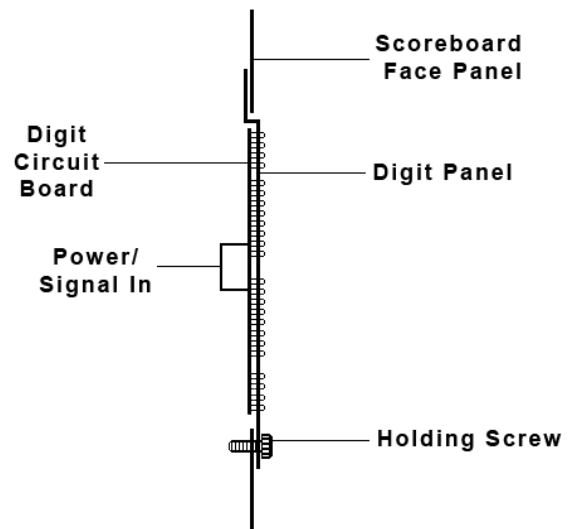


Figure 15: LED Digit Panel

Note: If the panel is not held in place when the screws are removed, it could drop and possibly damage LEDs or the digit harness.

With a non-digit access panel, simply remove the top, side and bottom screws holding it in place. Some panels are hinged and swing open when the screws are removed or loosened. Rear access panels can be lifted up and out over the screws through keyholes.

Note: When closing the access panel, make sure all latches/screws are holding the door firmly in place to prevent moisture and debris from entering the scoreboard.

5.3 Component Locations

Refer to **Drawing B-327249** in **Appendix A**. Drivers and power and signal components are typically mounted inside the scoreboard behind a digit or access panel.

5.4 Replacing Digits & Indicators

LEDs are embedded in a circuit board that is mounted to the back of the digit panel, as shown in **Figure 16**. Do not attempt to remove individual LEDs. In the case of a malfunctioning LED or digit segment, replace the entire circuit board.

To replace a digit or indicator circuit board:

1. Open the digit panel as described in **Section 5.2**.
2. Disconnect the power/signal plug from the back of the circuit board by squeezing together the locking tabs and pulling the connector free.
3. Use a $\frac{9}{32}$ " nut driver to remove the nuts securing the circuit board to the inside of the panel, and then lift it off the standoff studs.
4. Position a new circuit board over the studs, making sure the rubber side of the rubber-backed spacer is facing the circuit board.
5. Tighten the nuts.
6. Reconnect the power/signal connector.

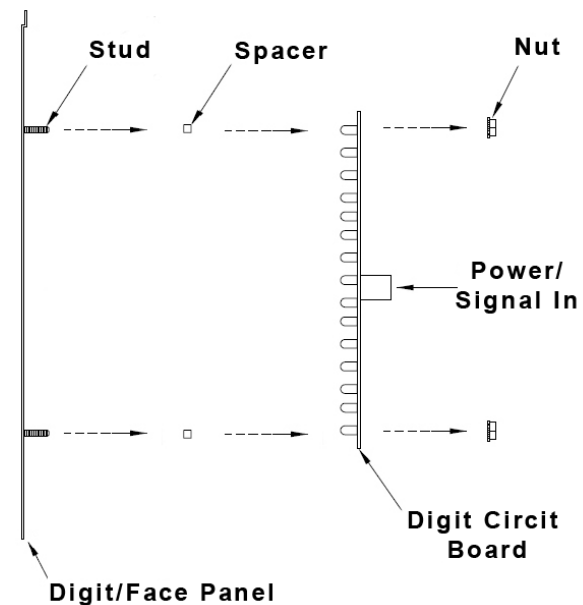


Figure 16: Digit Assembly

Note: This is a keyed connector and it will attach in one way only. Do not attempt to force the connection.

7. Close and secure the digit panel, then power up and test the scoreboard to see if changing the digit or indicator has resolved the problem.

5.5 LED Drivers

The LED drivers perform the task of switching digits on and off within the scoreboard. LED drivers are located inside of a driver enclosure. Refer to **Figure 17** to view the location and components of a driver enclosure.

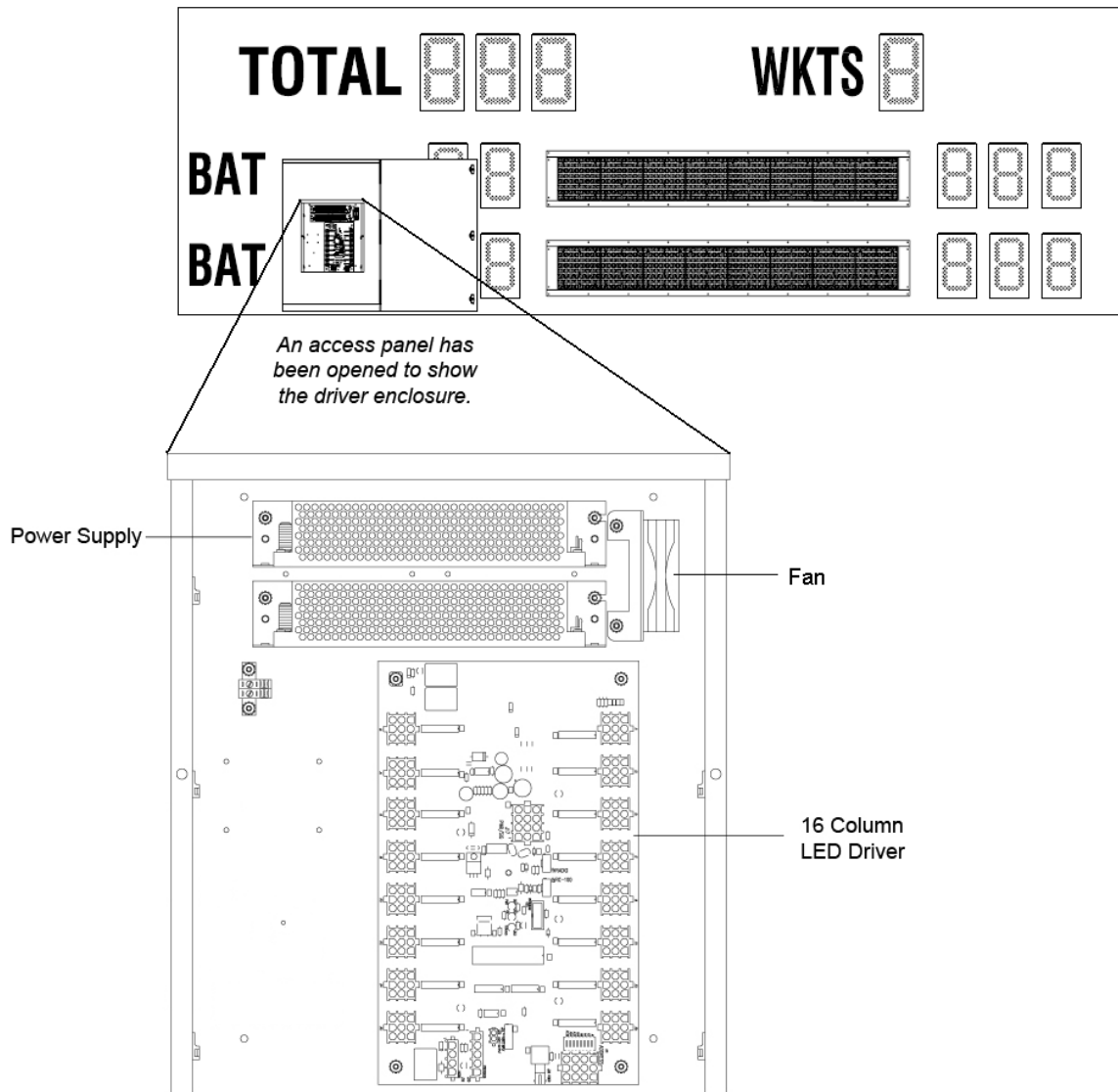


Figure 17: Driver Enclosure Location & Components

When troubleshooting driver problems, three LEDs labeled **DS1**, **DS2**, and **DS3** in **Figure 18**, provide the following diagnostic information:

LED	Color	Function	Operation	Summary
DS1	Green	Power	Steady on	DS1 will be on and steady to indicate the driver has power.
DS2	Red	Signal RX	Steady on or blinking	DS2 will be on or blinking when the driver is receiving a signal and off when there is no signal.
DS3	Amber	Status	Blinking	DS3 will be blinking at one second intervals to indicate the driver is running.

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

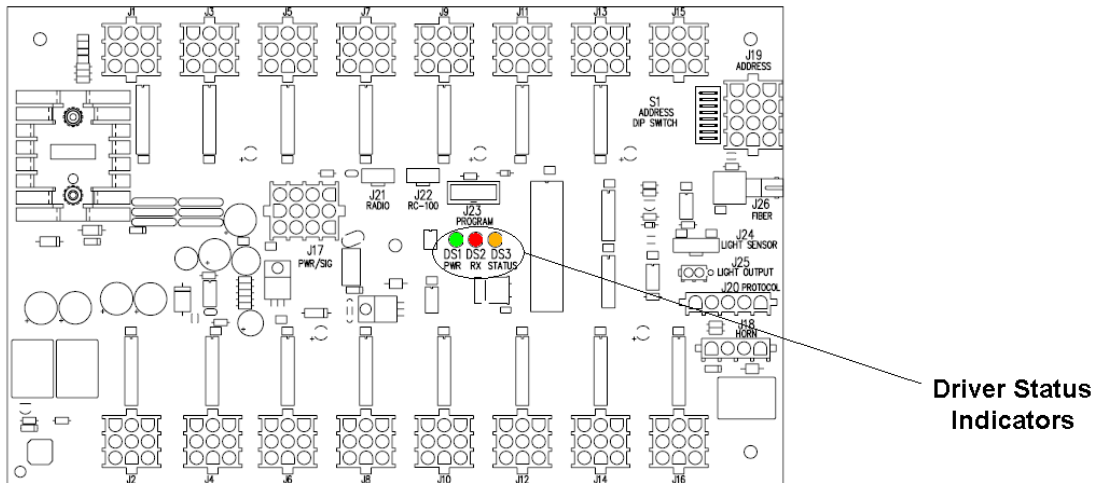


Figure 18: Driver Status Indicators

Replacing a Driver

1. Open a digit or access panel as described in **Section 5.2**.
2. Remove the metal cover from the driver enclosure.
3. Disconnect all connectors from the driver by squeezing together the locking tabs and pulling the connectors free.

Note: It may be helpful to label the cables to know which cable goes to which connector when reattaching the driver.

4. Remove the screws or 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 power/signal connectors.

Note: The connectors are keyed and will attach in one way only. Do not attempt to force the connections.

8. Ensure the driver is set to the correct address (refer to **Setting the Driver Address**).
9. Close and secure the digit panel, then power up and test the scoreboard to see if changing the driver has resolved the problem.

Setting the Driver Address

Since the same LED drivers can be used for many scoreboard models, each driver must be set to receive the correct signal input, or address, for the model being used. Addresses are set through the S1 dip switch on the driver (**Figure 19**) using a pen or small, pointed object.

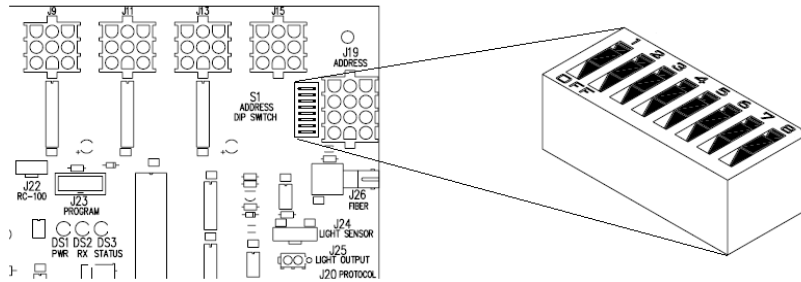


Figure 19: Driver Address Dip Switch

Refer to the specifications table in **Section 2** to determine the correct address setting of the driver(s) in a particular scoreboard model and see **Drawing A-290261** in **Appendix A** for addressing information for driver addresses 1 – 128.

Another method of setting the driver address using the J19 address plug is available. This address is set with jumper wires in a 12-pin plug which mates with a jack on the driver. Refer to **Drawing A-115078** for a listing of the wire/pin connections for driver addresses 1 – 128. When using an address plug, it will not be possible to set the address with the S1 dip switch.

5.6 Radio Connections

To determine the settings for radio connections between the scoreboard and control console:

1. Cycle power to the scoreboard.
2. After approximately seven seconds, the radio settings will be displayed. The first values are the broadcast settings (“b1”), and the second are the channel settings (“C1”). These values must match the settings within the console.

Note: If these settings do not appear, the radio receiver(s) may need to be repaired/replaced.

To make sure the current radio settings match the receiver in the scoreboard, refer to the operation manual of the particular control console being used (see **Section 1.4**).

Radio Interference

If it has been determined that a nearby scoreboard's radio signal is interfering, the broadcast and channel settings of the radio receiver inside the scoreboard(s) must be changed.

For more information, refer to the **Gen V Radio Installation Manual ED-13831**, available online at www.daktronics.com/manuals.

1. To locate the radio receiver, look for the small black antenna sticking out the front of the scoreboard.
2. Open the access panel to which the receiver is attached as described in **Section 5.2**.
3. The radio receiver has a plastic cover. Three status indicator LEDs are visible (**Figure 20**).

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

4. Remove the four screws using a #2 Philips screwdriver and lift off the cover.
5. Inside the receiver are a channel switch (S1) and two broadcast jacks (J4, J5) with a jumper.

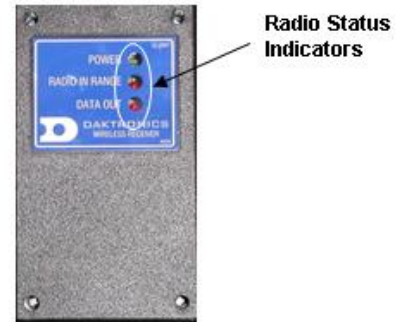


Figure 20: Radio Receiver w/ Cover

Figure 21 shows the different configurations for the small jumper wire that sets the radio broadcast (BCAST) mode. Move the jumper wire to the desired broadcast location.

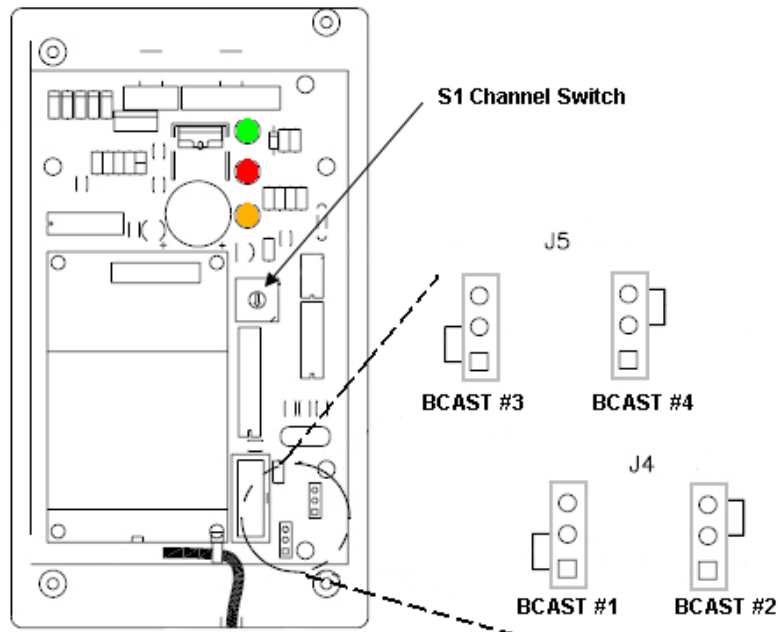


Figure 21: Radio Receiver w/o Cover

6. Use a small flathead screwdriver to set the S1 switch to the desired channel (1-8).
7. Screw the cover back on and securely close the access panel.
8. Enter the correct sport code and new radio settings into the console to test the radio control (refer to the appropriate scoreboard controller manual).

5.7 Segmentation and Digit Designation

In each digit, certain LEDs always go on and off together. These groupings of LEDs are called segments. **Drawing A-38532** in **Appendix A** details which connector pin is wired to each digit segment and the wiring color code used throughout the display. **Drawing B-327249** also specifies the driver connectors controlling the digits. Numbers shown below each digit indicate which driver and connector is wired to that digit.

5.8 Schematics

For advanced scoreboard troubleshooting and repair, it may be necessary to consult the schematic drawings. These drawings, located in **Appendix A**, show detailed power and signal wiring diagrams of internal display components such as drivers and transformers as well as optional components like TNMCs and radio receivers. Use the following table to determine the driver schematics for a particular model:

Model	Schematic Drawing #
CR-2005	B-236704
CR-2006	B-236733
CR-2007	B-235958
CR-2008	B-236727

5.9 Replacement Parts

Refer to the following table for common Daktronics scoreboard replacement parts:

Description	Location	Daktronics Part #
J-Box, 1/4" phone, Indoor	Signal	0A-1009-0038
J-Box, 1/4" phone, outdoor	Signal	0A-1091-0227
Signal surge board	Driver enclosure	0P-1110-0011
Digit, 15", 7-seg outdoor LED, red	Scoreboard	0P-1192-0200
Digit, 18", 7-seg outdoor LED, red	Scoreboard	0P-1192-0202
Digit, 15", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0214
Digit, 18", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0216
Indicator; 4" circular, red	Scoreboard	0P-1192-0244
Indicator; 4" circular, amber	Scoreboard	0P-1192-0245
Indicator; plus/minus, red	Scoreboard	0P-1192-0329
Indicator; plus/minus, amber	Scoreboard	0P-1192-0330
Driver, 16 col, outdoor, LED	Driver enclosure	0P-1192-0383
Power supply, 24 V, 150W (120 V AC)	Driver enclosure	A-1720
Power Supply; 24 V, 150W (240 V AC)	Driver enclosure	A-1733
Fan, 32 cfm, 24 V DC, 3.15 sq. in	Driver enclosure	B-1030

Description	Location	Daktronics Part #
Plug, 1/4" phone	Signal	P-1003
Signal cord; 1/4" phone 20'	Signal	W-1236
Signal cord; 1/4" phone 50'	Signal	W-1237
Signal cord; 1/4" phone 30'	Signal	W-1238
Cable; RS-232, DB9F to DB25M, 6'	Signal	W-1249
Signal cord; 1/4" phone 10'	Signal	W-1340

5.10 Daktronics Exchange and Repair & Return Programs

Exchange Program

The Daktronics Exchange Program is a quick, economical service for 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 not only saves money but also 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: _____
 Contract Number: _____
 Date Installed: _____
 Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps.

1. Call Daktronics Customer Service.

Market Description	Customer Service Number
Schools (primary through community/junior colleges), religious organizations, municipal clubs and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums and arenas	866-343-6018

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 which is 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. A charge will be made for the replacement part immediately, unless a qualifying service agreement is in place. In most circumstances, the replacement part will be invoiced at the time it is shipped.

If the failed part or replacement part is not returned to Daktronics within 3 weeks of the ship date, Daktronics will assume that the customer is purchasing the replacement part and will send an invoice for the value of the new sale part. If the part or parts are returned within 2 weeks of the second invoice date, Daktronics will credit the customer for the second invoice.

If after 2 weeks Daktronics has still not received the parts back, the customer must pay the second invoice and will not be credited for the return of the failed 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 or fax Daktronics Customer Service:**
Refer to the appropriate market number in the chart listed on the previous page.
2. **Receive a Return Materials Authorization (RMA) 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 RMA number
 - a clear description of symptoms

Shipping Address

Daktronics Customer Service
RMA #
201 Daktronics Drive, Dock E
Brookings, SD 57006

Fax: 605-697-4444

Daktronics Warranty and Limitation of Liability

The Daktronics Warranty and Limitation of Liability is located in **Appendix C**. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

Section 6: TNMC Troubleshooting & Maintenance

IMPORTANT NOTES:

1. Always disconnect scoreboard power before doing any repair/maintenance work on the message centers.
2. Permit only qualified service personnel to access internal display electronics.
3. Disconnect power when not using the scoreboard.

6.1 Team Name Message Center System Overview

Team name message centers (TNMCs) use amber, red, or white LEDs to display team names (home and guest) in place of vinyl captions (**Figure 22**). On the CR-2004, TNMCs are also used to display the current BATSMEN names as well as a HOW OUT description. TNMCs for the CR-2004 are available with two different pixel dimensions: 8x32 and 8x64. Characters are shown on one line using single- or double-stroke fonts up to 10" (254 mm) high for 34 mm TNMC units.

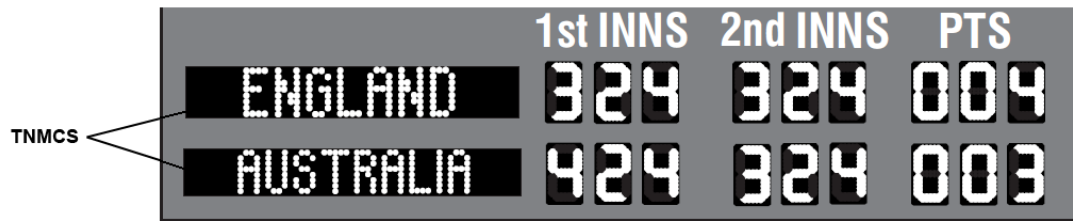


Figure 22: Team Name Message Centers

Matrix Size	# of modules	Pixel Spacing	Active Display Area	Weight*
8x32	4	34 mm (1.3")	10.6" x 42.5" (269 mm x 1080 mm)	40 lb (18 kg)
8x64	8	34 mm (1.3")	10.6" x 85.1" (269 mm x 2162 mm)	80 lb (36 kg)

* TNMCs are typically installed in pairs; double this value to find the total added weight.

6.2 Initialization Information at Startup

Every time the display is powered up and there is no All Sport[®] signal present, the display will run through an initialization process, during which it will test all LEDs and addresses. First, the message center will display the proper address number.

If the entire display fails at startup, power may not be properly connected, or the address setting may not be correct on the display driver. Check both in the event of a failure.

6.3 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.

Many of the solutions offered below provide references to other sections within this manual with further detail on how to fix the problem.

If a problem occurs that is not listed or that cannot be resolved using the solutions in the following table, contact Daktronics using the information provided in **Section 5.10**.

Symptom/Condition	Possible Remedy
One or more LEDs on a single module fails to light	Check/replace the ribbon cables on the module.
	Replace the module. See Section 6.7 .
One or more LEDs on a single module fails to turn off	Check/replace the ribbon cables on module.
	Replace the module. See Section 6.7 .
A section of the display not working; section extends all the way to the right side of the display	Check/replace the ribbon cables running to the first module that is not working.
	Replace the first module/driver on the left side of the first module that is not working. See Section 6.7 .
	Replace the second module that is not working. See Section 6.7 .
	Replace the power supply assembly on the first module that is not working. See Section 6.8 .
One row of modules does not work or is garbled	Replace the first module. See Section 6.7 .
	Replace the display driver. See Section 6.6 .
A group of modules that share the same power supply assembly fails to work	Replace the power supply assembly. See Section 6.8 .
Entire display fails to work	Check for proper line voltage into the power termination panel.
	Check/replace the ribbon cable from the display driver to the modules.
	Check the voltage settings on the power supplies.
	Check/replace the signal cable to the driver.
	Repair/replace the driver. See Section 6.6 .

6.4 Power & Signal Summary

Reference Drawings:

Schematic, Amber TNMC, GEN IV	Drawing A-252645
Schematic, Red TNMC, GEN IV	Drawing A-252681
Schematic; 832 / 848 / 864 Red TNMC GEN IV, 240V.....	Drawing A-294858
Schematic; 832 / 848 / 864 Amber GEN IV, 240V	Drawing A-294919
Schematic, OD, 3500, 34mm TNMC, Red/Amb	Drawing B-783938
Schematic, OD, 3500, 34mm TNMC, Wht.....	Drawing B-906385

Refer to **Drawings B-783938** or **B-906385** for detailed schematics about display power and signal routing.

Note: For displays built before September 2009, refer instead to **Drawings A-252645, A-252681, A-294858, or A-294919.**

Display signal routing can be summarized as follows:

1. Data from the All Sport[®] controller travels via cable harness into the scoreboard.
2. The signal travels to the driver/power enclosure through the J1 connector on the signal surge arrestor card.
3. Data exits at J42 via current loop harness, and connects with P43 at the driver assembly. A power/signal interconnect (ribbon cable) carries the signal to the first module, and the signal relays from module to module, in daisy-chain style, until it reaches the last module on the message center.

Display power routing can be summarized as follows:

1. Incoming power terminates at the terminal block in the scoreboard driver enclosure. Using the same harness and J42-P43 connections as signal, power is then routed to the display driver where it then travels to the power supply assembly.
2. From the power supply assembly, power is relayed to the first module, and then from module to module.
3. The modules and display driver draw their power directly from the power supply assemblies (3-12.5 VDC). The power supply voltage is set by a resistor loaded on the module (via J4).

Note: In displays built before September 2009, modules draw their power directly from the power supply assemblies (6.5 V for red LED modules, 9 V for amber), while the display driver receives 16 V power from a transformer on the driver tray.

6.5 Component Locations & Access

Reference Drawings:

Component Locations; 832/848/864 Red/Amb LED, TNMC, G4**Drawing A-257029**

Component Loc.; 34mm Red/Amb/Wht LED TNMC G4**Drawing B-975100**

Figure 23 illustrates the component locations of an 8x48-34mm display with all modules removed. This layout will be similar for 8x32-34mm cabinets as well. The 8x64-34mm cabinets require an additional power supply behind the sixth module. Refer to **Drawing B-975100**.

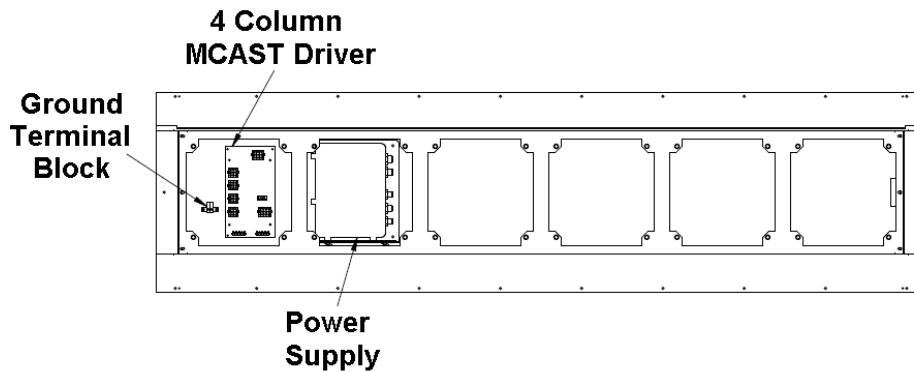


Figure 23: 8x48-34 Display with Modules Removed

For Displays Built Before September 2009

Figure 24 illustrates the component locations of an older 8x48-34mm display, and this layout will also be similar for 8x32-34mm and 8x64-34mm cabinets. Refer to **Drawing A-257029**.

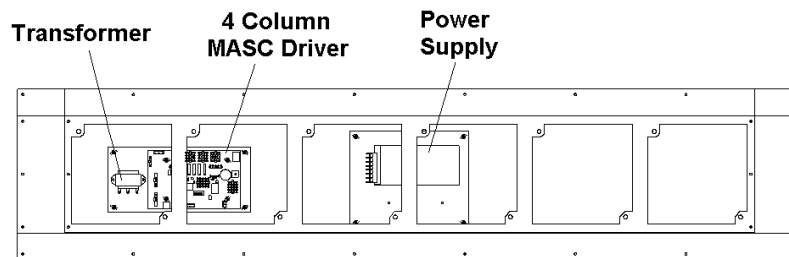


Figure 24: Discontinued 8x48-34mm Display with Modules Removed

Standard Daktronics outdoor LED scoreboards are typically front-accessible, but some models may be ordered with rear service access. For that reason, Daktronics TNMCs have been designed so that they may be accessed from both the front and rear.

Front Access

1. Loosen the latch fasteners on the front face the LED module using a 1/8" hex wrench (or 7/32" nut driver for displays installed prior to 11/29/05). One latch fastener is centered below the top row of pixels and one is centered above the bottom row (Figure 25).
2. Turn each fastener a quarter-turn counter-clockwise (if using a nut driver, turn the top latch clockwise and the bottom latch counterclockwise).

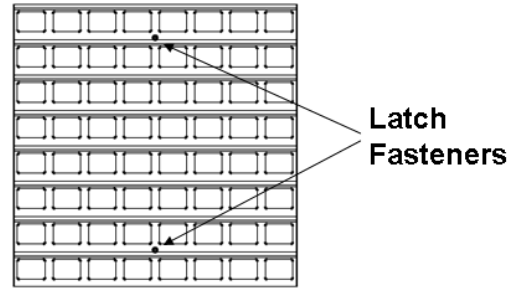


Figure 25: Module, Front View

Note: Do not over turn the fastener!

Carefully remove the module from the face of the message center.

Rear Access

1. To access the internal components from the rear, remove the appropriate rear-access panel from the display cabinet by loosening all four of the screws.
2. Slide the access panel sideways to the larger part of the keyhole and carefully lift it off the display cabinet.

Note: Be careful when removing and handling the access panels as internal display components may still be attached to them.

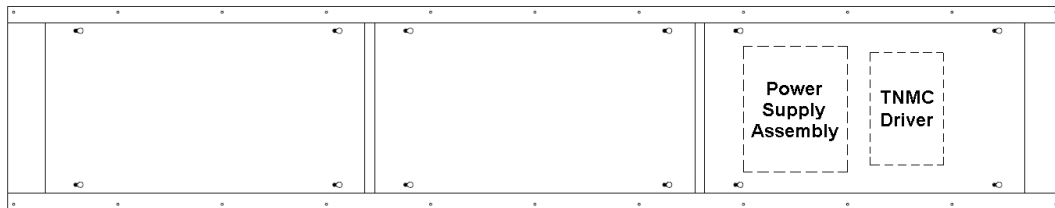


Figure 26: Display Cabinet Rear Access

The display driver and primary power supply will always be located behind the first access panel on the right, when viewing the display from behind. Any additional power supplies are noted in the appropriate component location drawings.

Note: In displays built before September 2009, the display driver is located behind the first access panel and the primary power supply is located behind the second access panel.

6.6 Display Drivers

Reference Drawings:

Address Table, 129 Through 255	Drawing A-115079
4 Column MASC LED Driver Specifications	Drawing A-166216
Address Table: Driver- MCAST G2- TNMC Switch	Drawing A-328274
Specifications; Driver, MCAST, 4 Col	Drawing A-793970

The display driver receives signal from the control console via a signal surge arrestor card and sends data to the modules. Refer to **Section 6.4** for more information on signal routing. The driver itself is detailed in **Drawing A-793970** in **Appendix A**. **Figure 27** illustrates some of the primary jacks and switches on the 4 Column MCAST display driver.

The S2 DIP switch controls Home and Guest display. When the #5 switch is ON, the driver sends guest team information to the display. In the opposite message center, the switch would be set to OFF, and home information would be displayed.

The S2 DIP switch is also used to set the address (switches #1-4). With switches 1-4 off, the address setting equals "221". This is the address needed to display BATSMAN names. Team names must be set to address "222", and the HOW OUT display must be set to address "223" with the #5 switch OFF (home). Refer to **Drawing A-328274** in **Appendix A** for more information on setting the driver address.

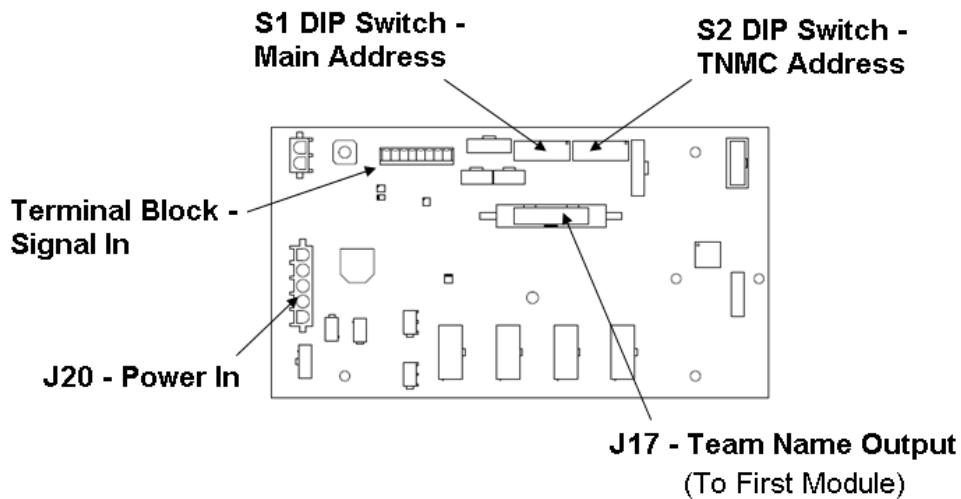


Figure 27: 4 Column MCAST Driver

For Displays Built Before September 2009

The display driver receives signal from the control console via a signal surge arrestor card and sends data to the modules. Refer to **Section 6.4** for more information on signal routing. The driver itself is detailed in **Drawing A-166216** in **Appendix A**. **Figure 28** illustrates a display control assembly with a 4-column MASC driver.

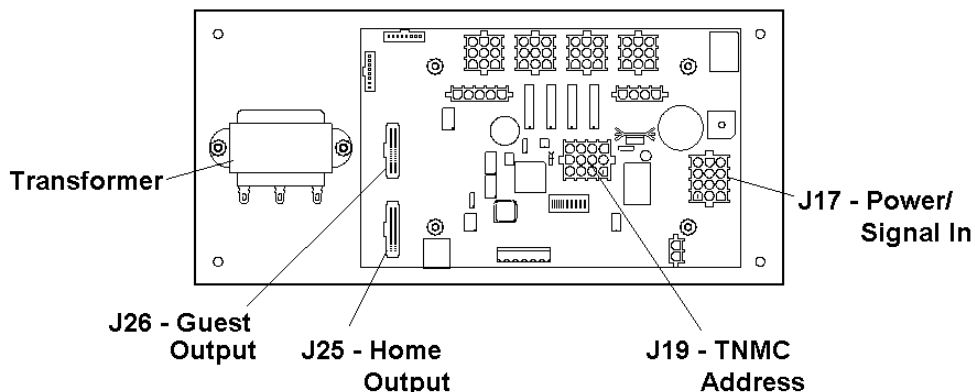


Figure 28: Control Assembly (4 Column MASC Driver)

Connectors J25 and J26 control Home and Guest displays. When the ribbon cable is plugged into J25, the TNMC displays home team information. In the opposite message center, the signal cable should be plugged into the J26 connector to display guest information.

J19 is the connector for the address plug. To display BATSMAN names, the display address must be set to "221". Team names must be set to address "222", and the HOW OUT display must be set to address "223" and plugged into J25. Refer to **Drawing A-115079** in **Appendix A** for more information on setting the driver address.

Diagnostic LEDs

The following table explains the functions of the primary diagnostic LEDs on the 4 Column MASC/MCAST drivers:

LED Name	Color	Illumination Summary
(CL) RX	Red	Steady on or blinking when the driver is receiving signal and off when there is no signal
(CL) TX	Green	Steady on or blinking when the driver is transmitting and off when there is no signal
Power	Green	Steady on to indicate the driver has power
Status	Amber	Blinking to indicate driver is running

Replacing a Driver

1. Access the internal components using the appropriate **Front/Rear Access** method described in **Section 6.5**.
2. Disconnect all power and signal connectors from the driver by squeezing together the locking tabs and pulling the connectors free.

Note: It may be helpful to label the cables to know which cable goes to which connector when reattaching a driver.

3. Remove the four nuts holding the driver in place.
4. Position a new driver over the screws and tighten the nuts.
5. Reconnect all power/signal connectors.
6. Ensure the driver is set to the correct address.
7. Power up and test the scoreboard/display to see if changing the driver has resolved the problem.

6.7 Modules

Each module assembly is made up of a module housing (containing LEDs and the driver) and a louver assembly. Individual components such as louvers can be removed for service, but Daktronics recommends that the module be kept intact and that the entire assembly be sent in for repair or replacement.

Replacing Modules

To replace a module from the front:

1. Follow the steps in the **Front Access** method described in **Section 6.5**.
2. Carefully disconnect all power and signal cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching a module.
3. Position a new module on the front of the display frame and reconnect all power and signal cables.
4. Re-latch the fasteners.
5. Power up and test the scoreboard/display to see if changing the module has resolved the problem.

To replace a module from the rear:

1. Follow the steps in the **Rear Access** method described in **Section 6.5**.
2. Use a 1/8" hex wrench or 7/32" nut driver to loosen the latch fastener assembly (**Figure 29**). Turn each fastener a quarter-turn clockwise (if using a nut driver, turn the top latch counter-clockwise and the bottom latch clockwise).

Note: Do not over turn the fastener!

3. While holding onto the module, push it out and turn it in such a manner (generally a sideways, diagonal turn) that it can be pulled back through the frame opening.
4. Carefully disconnect all power and signal cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching a module.
5. Reconnect all power and signal cables to the new module and push it back through and out the front of the display frame.
6. Re-latch the fasteners.
7. Power up and test the scoreboard/display to see if changing the module has resolved the problem.

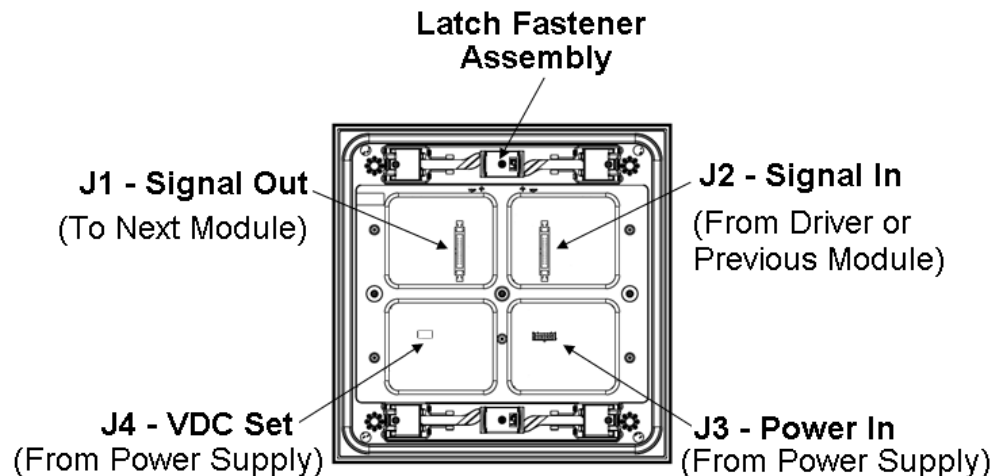


Figure 29: Module, Rear View

Weather-stripping

To ensure that the display is waterproof, weather-stripping has been installed around each module. It is important that the weather-stripping is attached properly at all times, or water may leak into the display and damage the components.

When installing a new module, take note of the following points:

- The weather-stripping on the back edge of the module must be intact and in good condition to prevent water from seeping into the display.
- The module latches must be fully engaged to create a watertight seal around the edge of the module. The module should be firmly seated against the display when the latches are fully engaged.

6.8 Power Supplies

Power supply configurations will vary depending on the number and/or color of modules.

Replacing a Power Supply

To remove a power supply from the display:

1. Access the internal components using the appropriate **Front/Rear Access** method described in **Section 6.5**.
2. Disconnect all the wires connected to the power supply.
3. Loosen the screw securing the power supply and slide it out of the display cabinet.

Note: In displays built before September 2009, use a 9/32" nut driver to remove the hardware securing the power supply.

4. Fasten the new power supply in place and reconnect all wires.

6.9 Display Maintenance

Complete a yearly inspection to maintain safe and dependable display operation.

This inspection should address the following issues:

- **Loose Hardware:** Verify that fasteners, such as bolts and rivets, have not come loose. Check and tighten or replace fasteners as required.
- **Excessive Dust Buildup:** It may be necessary to occasionally vacuum the inside of the display cabinet to remove dust/dirt buildup that may interfere with airflow.
- **Water Intrusion - Water stain marks:** Water can enter the display where weather-stripping has come loose or deteriorated; where fasteners have come loose, allowing gaps in the panels; or where moisture may be entering around hardware. Check electronic components for corrosion.
- **Corrosion:** Check the paint, and look for possible corrosion, especially at footings, structural tie points, and ground rods and other types of grounding electrodes.

Note: If any of the preceding conditions are discovered, make the necessary repairs or take corrective action immediately.

6.10 Replacement Parts List

The following tables contain TNMC components that may have to be replaced. Many of the components within the display itself have attached part number labels.

Part Description	Part Number
Module; 8X8-34, Red	0A-1208-5005
Module; 8X8-34, Red (<i>Sep 2009 – Nov 2010 only</i>)	0A-1208-5002
Module; 8X8-34, Amber	0A-1208-5008
Module; 8X8-34, White	0A-1208-5004
Driver; MCAST, 4 Column	0P-1388-0201
Power Supply; 3-6.5V, 90-264V AC (<i>all 34mm LED colors</i>)	A-2307
Cable; 20 pos, Ribbon, 36"	W-1495
Cable; 20 pos, Ribbon, 18"	W-1387
Electrical contact lubricant (CaiLube [®])	CH-1019

For Displays Built Before September 2009

Part Description	Part Number
Ribbon Cable, 18" (module to module)	0A-1000-0015
Ribbon Cable, 30" (TNMC driver to first module)	0A-1000-0017
4-col MASC Driver	0P-1192-0068
<ul style="list-style-type: none"> ▪ Transformer; 115/230 V pri, 16 V sec @ 2 A 	T-1063
Power Supply Assembly; Red TNMC	0A-1192-3160
<ul style="list-style-type: none"> ▪ Power Supply; 6.5V, 15A, 85-264 V AC 	A-1591
Power Supply Assembly; Amber TNMC	0A-1192-3161
<ul style="list-style-type: none"> ▪ Power Supply; 9V, 17A, 85-265 V AC 	A-1633
Red 8x8 34mm Module Assembly	0A-1208-4004
Amber 8x8 34mm Module Assembly	0A-1208-4005

See **Section 5.10** for information on Daktronics Exchange and Repair and Return program.

Section 7: Additional Scoreboard Options

7.1 Radio Control

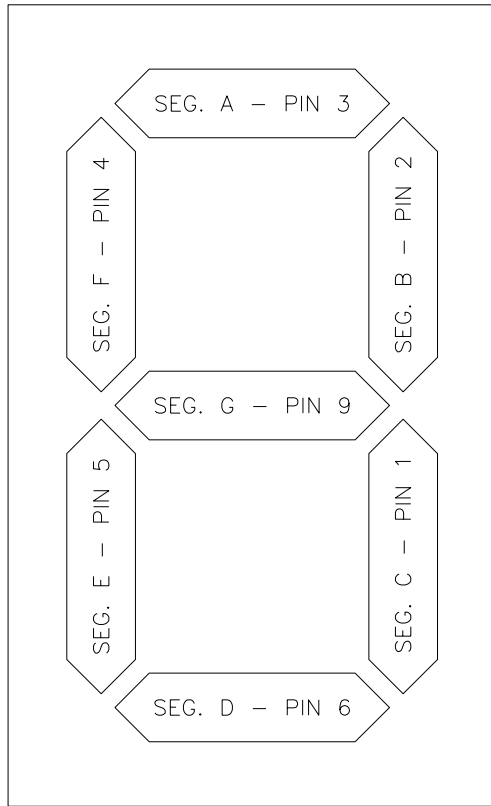
Radio control is an option for all Daktronics outdoor LED scoreboards. The system provides scoreboard control via a 2.4 GHz, extra-high frequency FM signal.

The radio transmitter and receiver are not standard. This setup requires a control console equipped with radio output as well as a radio receiver plugged into the power terminal block in the driver/power enclosure and mounted internally to the front panel of the scoreboard.

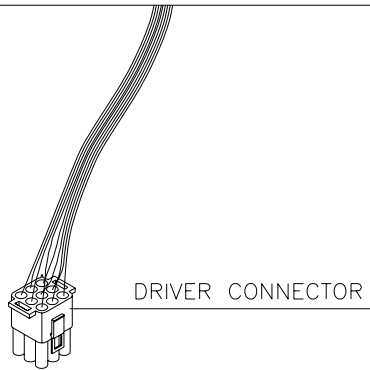
For additional information about this option, contact a Daktronics representative; for complete information on setting up radio communication control, refer to the **Gen V Radio Installation Manual (ED-13831)**, available online at www.daktronics.com/manuals.

Appendix A: Reference Drawings

Segmentation, 7 Segment Bar Digit	Drawing A-38532
Ad Panel Mounting.....	Drawing A-52187
Scoreboard Mounting	Drawing A-55101
Steel Clip Angle Mounting.....	Drawing A-83301
Address Table, 1 Through 128	Drawing A-115078
Address Table, 129 Through 255	Drawing A-115079
Schematic, Multipurpose LED DRV R	Drawing A-165028
4 Column MASC LED Driver Specifications	Drawing A-166216
Schematic and Digit Designation: CR-2007	Drawing B-235958
Overall Layout; CR-2004, Multi-section	Drawing B-236615
Schematic and Digit Designation: CR-2005	Drawing B-236704
Schematic and Digit Designation: CR-2008	Drawing B-236727
Schematic and Digit Designation: CR-2006	Drawing B-236733
Clip DWG; CR-2004	Drawing B-238471
Schematic, Amber TNMC, GEN IV.....	Drawing A-252645
Schematic, Red TNMC, GEN IV.....	Drawing A-252681
Component Locations; 832/848/864 Red/Amb LED, TNMC, G4	Drawing A-257029
Shop DWG, CR-2004-11/-21, Clip Mtg	Drawing B-268714
Specifications; LED Driver IV, 16 Col	Drawing A-288137
Address Table 1; GEN IV Driver Address Dip Switch.....	Drawing A-290261
Schematic; 832 / 848 / 864 Red TNMC GEN IV, 240V	Drawing A-294858
Schematic; 832 / 848 / 864 Amber GEN IV, 240V.....	Drawing A-294919
System Riser: Computer Controlled Cricket.....	Drawing B-326325
Component Location; CR-2004-11, -21, -12, -22	Drawing A-327249
Address Table: Driver- MCAST G2- TNMC Switch	Drawing A-328274
Schematic, OD, 3500, 34mm TNMC, Red/Amb	Drawing B-783938
Specifications; Driver, MCAST, 4 Col	Drawing A-793970
Schematic, OD, 3500, 34mm TNMC, Wht	Drawing B-906385
Component Loc.; 34mm Red/Amb/Wht LED TNMC G4	Drawing B-975100



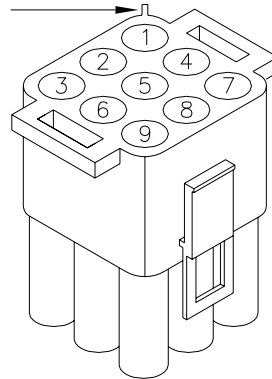
7 SEGMENT BAR DIGIT
FRONT VIEW



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

CONNECTOR PIN NUMBERING

NOTE SPLINE NEAR NO. 1



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

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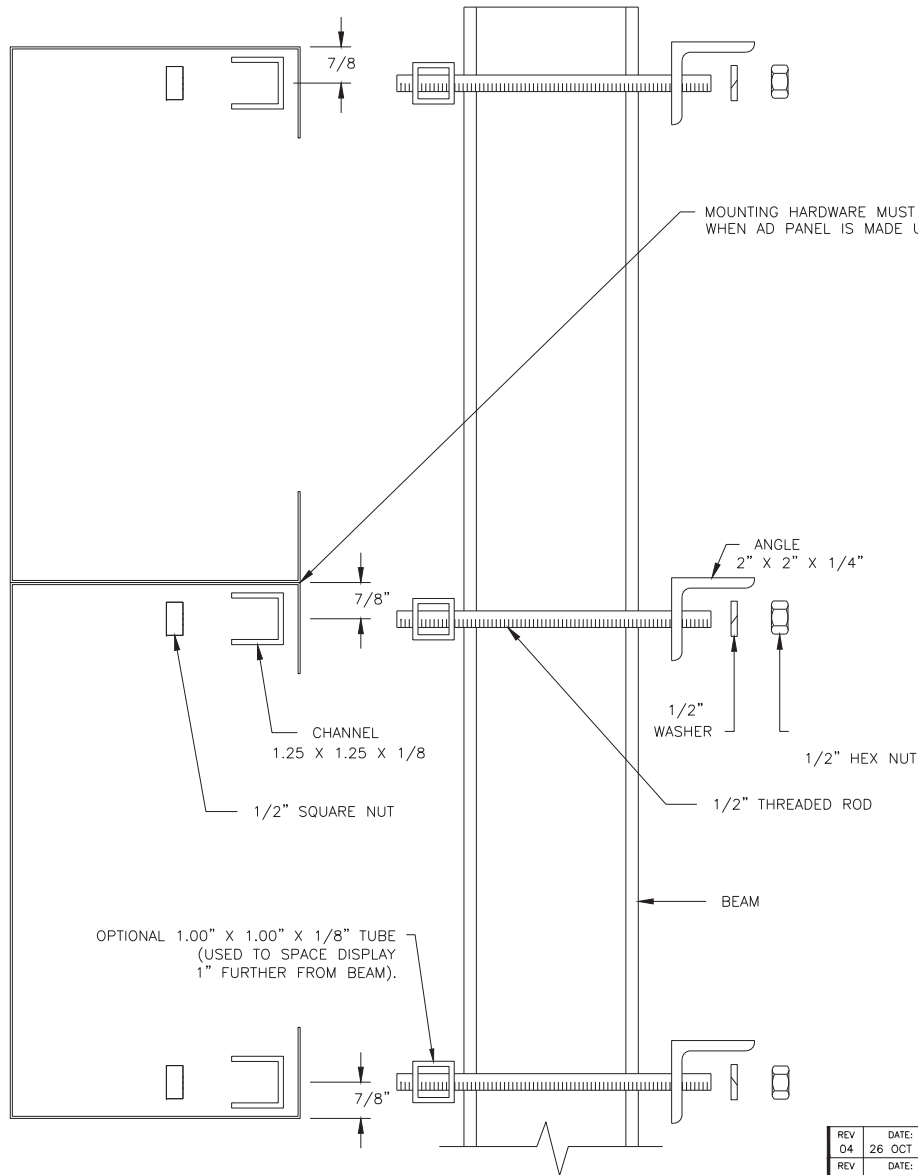
PROJ: BASKETBALL

TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT

DES. BY: DRAWN BY: HEIDERSCHIEDT DATE: 5 JUN 89

REVISION 02 APPR. BY: AVB SCALE: 1=4 1009-R04A-38532

REV.	DATE	DESCRIPTION	BY	APPR.
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	



MOUNTING HARDWARE MUST BE USED AT ALL AD PANEL SPLICES WHEN AD PANEL IS MADE UP OF MULTIPLE SECTIONS

MOUNTING INSTRUCTIONS:

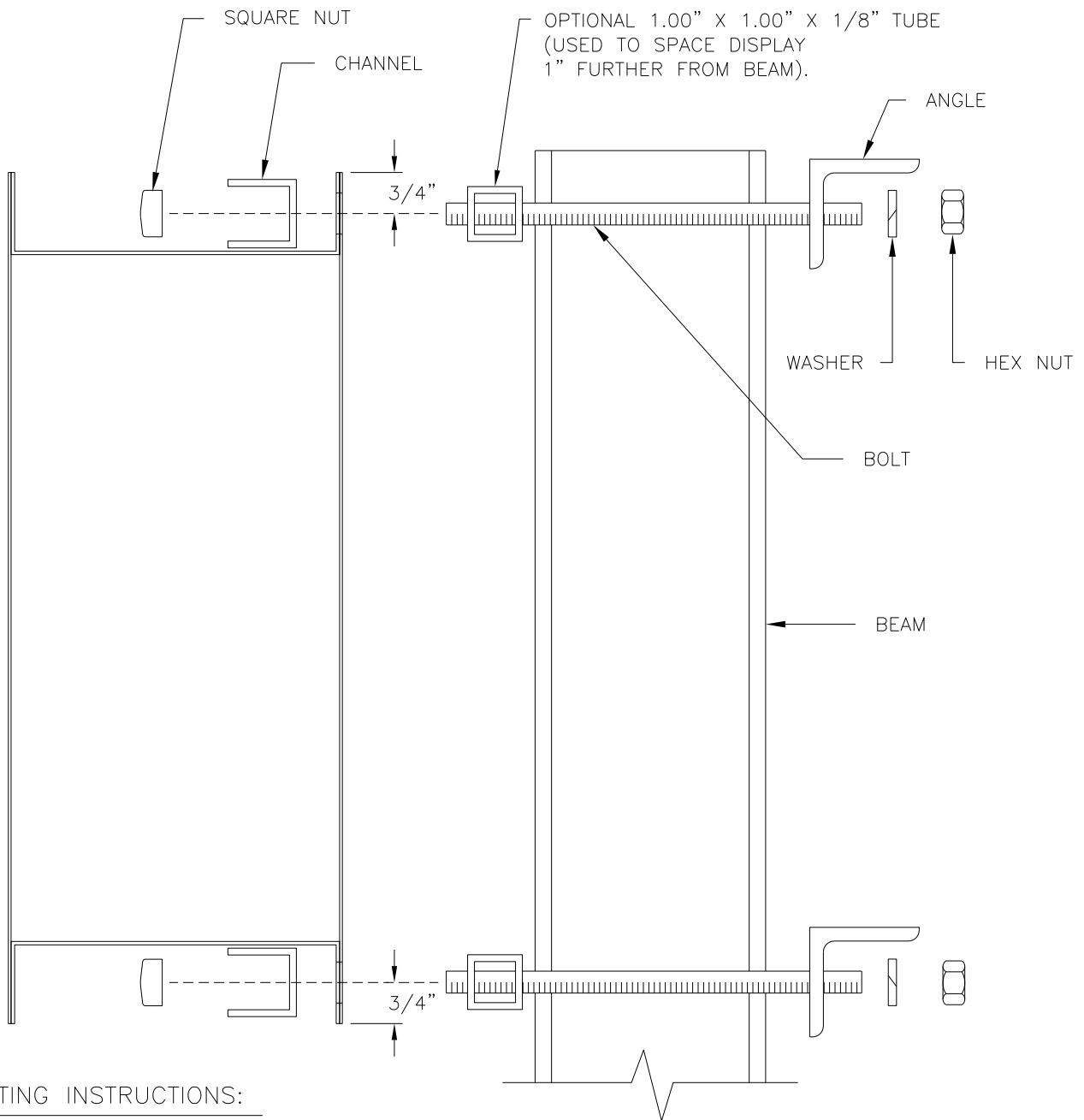
1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF AD PANEL WHERE THE SUPPORTS WILL GO.
3. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
4. LIFT AD PANEL INTO POSITION WITH BOLTS STILL IN PLACE.
5. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.
6. WHEN PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

MOUNTING INSTRUCTIONS: FOR AD PANELS WITH BACKSHEETS.

1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF AD PANEL WHERE THE SUPPORTS WILL GO.
3. REMOVE BACKSHEETS IN AREAS ABOVE AND BELOW HOLES DRILLED IN STEP 2.
4. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
5. REPLACE BACKSHEETS REMOVED IN STEP 3.
6. LIFT AD PANEL INTO POSITION WITH BOLTS STILL IN PLACE.
7. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.
8. WHEN PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

REV 04	DATE: 26 OCT 11	ADDED NOTE FOR USING MOUNTING HARDWARE AT AD PANEL SPLICES	BY: MBC
REV 03	DATE: 12 APR 10	ADDED 1" TUBE SPACER	BY: KDD
REV 02	DATE: 13 AUG 97	INCLUDED INSTRUCTIONS FOR AD PANELS WITH BACKSHEETS	BY: JAA
REV 01	DATE: 26 MAY 93	ADDED DESCRIPTION TEXT TO PARTS.	BY: MGG

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PROJ: OUTDOOR INCANDESCENT SCOREBOARDS TITLE: AD PANEL MOUNTING		
DESIGN:	DRAWN: MGUNDESON	DATE: 09 JUL 92
SCALE: NONE		
SHEET	REV	JOB NO.
	04	P1091
		FLUNC-TYPE-SIZE
		R-10-B
		52187

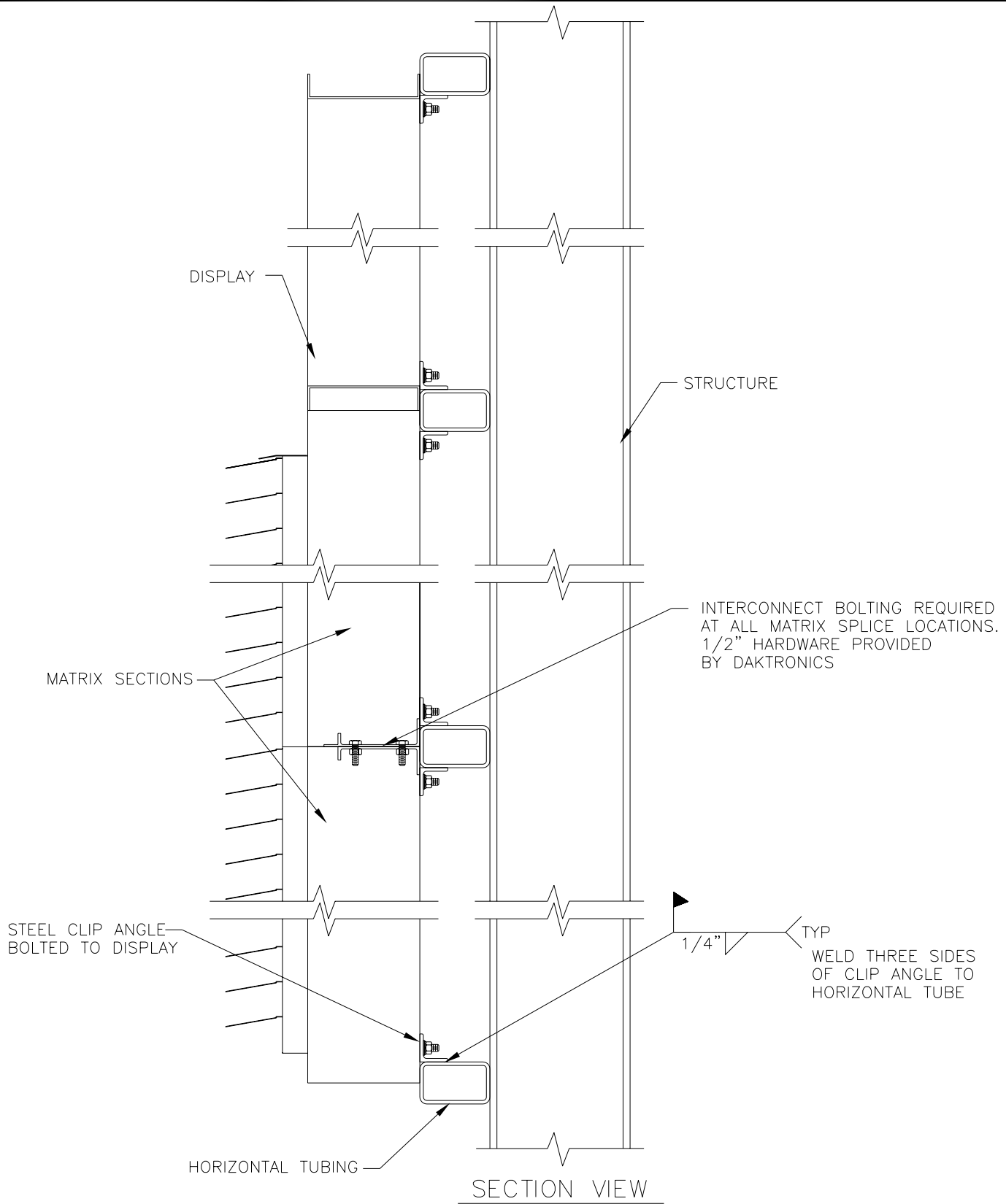


MOUNTING INSTRUCTIONS:

1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF SCOREBOARD WHERE THE SUPPORTS WILL GO.
3. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
4. LIFT SCOREBOARD INTO POSITION WITH BOLTS STILL IN PLACE.
5. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.
6. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: SCOREBOARD MOUNTING			
DES. BY:	DRAWN BY: A VANBEMMEL	DATE: 10FEB93	
REVISION	APPR. BY:	1091-R10A-55101	
01	SCALE: NONE		

01	12 APR 10	ADDED 1" TUBE SPACER	KDD	
REV.	DATE	DESCRIPTION	BY	APPR.



MOUNTING INSTRUCTIONS:

1. LIFT DISPLAY SECTION INTO POSITION.
2. ADJUST CLIP ANGLES AS NEEDED, SO THEY ARE FIRMLY AGAINST HORIZONTAL TUBE.
3. BOLT ANY MATRIX SPLICES.
4. WELD THE THREE SIDES OF EACH CLIP ANGLE THAT ARE IN CONTACT WITH THE HORIZONTAL TUBE.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARDS			
TITLE: STEEL CLIP ANGLE MOUNTING			
DES. BY: BPETER		DRAWN BY: BPETER	
DATE: 30JAN97			
REVISION	APPR. BY:	1173-E07A-83301	
	SCALE: 1=10		

REV.	DATE	DESCRIPTION	BY	APPR.
1	09OCT97	ADDED MATRIX SPLICE DETAIL ADDED NOTE 3	BDP	

KEY: 0 = WIRE NOT CONNECTED 1 = WIRE IS CONNECTED

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	1
4	0	0	0	0	0	0	1	0
5	0	0	0	0	0	0	1	0
6	0	0	0	0	0	0	1	0
7	0	0	0	0	0	0	1	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
33	0	0	1	0	0	0	0	1
34	0	0	1	0	0	0	0	1
35	0	0	1	0	0	0	0	1
36	0	0	1	0	0	0	0	1
37	0	0	1	0	0	0	0	1
38	0	0	1	0	0	0	0	1
39	0	0	1	0	0	0	0	1
40	0	0	1	0	0	0	0	1
41	0	0	1	0	0	0	0	1
42	0	0	1	0	0	0	0	1
43	0	0	1	0	0	0	0	1
44	0	0	1	0	0	0	0	1
45	0	0	1	0	0	0	0	1
46	0	0	1	0	0	0	0	1
47	0	0	1	0	0	0	0	1
48	0	0	1	0	0	0	0	1

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
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66	0	1	0	0	0	0	0	1
67	0	1	0	0	0	0	0	1
68	0	1	0	0	0	0	0	1
69	0	1	0	0	0	0	0	1
70	0	1	0	0	0	0	0	1
71	0	1	0	0	0	0	0	1
72	0	1	0	0	0	0	0	1
73	0	1	0	0	0	0	0	1
74	0	1	0	0	0	0	0	1
75	0	1	0	0	0	0	0	1
76	0	1	0	0	0	0	0	1
77	0	1	0	0	0	0	0	1
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80	0	1	0	0	0	0	0	1

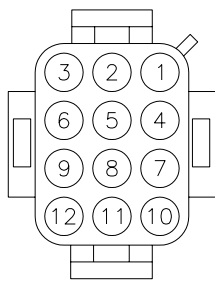
DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
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98	0	1	1	0	0	0	0	1
99	0	1	1	0	0	0	0	1
100	0	1	1	0	0	0	0	1
101	0	1	1	0	0	0	0	1
102	0	1	1	0	0	0	0	1
103	0	1	1	0	0	0	0	1
104	0	1	1	0	0	0	0	1
105	0	1	1	0	0	0	0	1
106	0	1	1	0	0	0	0	1
107	0	1	1	0	0	0	0	1
108	0	1	1	0	0	0	0	1
109	0	1	1	0	0	0	0	1
110	0	1	1	0	0	0	0	1
111	0	1	1	0	0	0	0	1
112	0	1	1	0	0	0	0	1

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
17	0	0	0	1	0	0	0	1
18	0	0	0	1	0	0	0	1
19	0	0	0	1	0	0	0	1
20	0	0	0	1	0	0	0	1
21	0	0	0	1	0	0	0	1
22	0	0	0	1	0	0	0	1
23	0	0	0	1	0	0	0	1
24	0	0	0	1	0	0	0	1
25	0	0	0	1	0	0	0	1
26	0	0	0	1	0	0	0	1
27	0	0	0	1	0	0	0	1
28	0	0	0	1	0	0	0	1
29	0	0	0	1	0	0	0	1
30	0	0	0	1	0	0	0	1
31	0	0	0	1	0	0	0	1
32	0	0	0	1	0	0	0	1

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
49	0	0	1	1	0	0	0	1
50	0	0	1	1	0	0	0	1
51	0	0	1	1	0	0	0	1
52	0	0	1	1	0	0	0	1
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54	0	0	1	1	0	0	0	1
55	0	0	1	1	0	0	0	1
56	0	0	1	1	0	0	0	1
57	0	0	1	1	0	0	0	1
58	0	0	1	1	0	0	0	1
59	0	0	1	1	0	0	0	1
60	0	0	1	1	0	0	0	1
61	0	0	1	1	0	0	0	1
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63	0	0	1	1	0	0	0	1
64	0	0	1	1	0	0	0	1

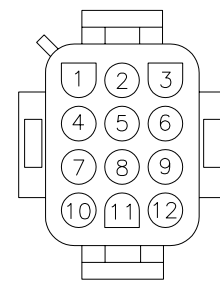
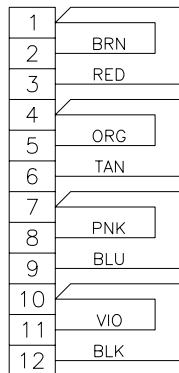
DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
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82	0	1	0	1	0	0	0	1
83	0	1	0	1	0	0	0	1
84	0	1	0	1	0	0	0	1
85	0	1	0	1	0	0	0	1
86	0	1	0	1	0	0	0	1
87	0	1	0	1	0	0	0	1
88	0	1	0	1	0	0	0	1
89	0	1	0	1	0	0	0	1
90	0	1	0	1	0	0	0	1
91	0	1	0	1	0	0	0	1
92	0	1	0	1	0	0	0	1
93	0	1	0	1	0	0	0	1
94	0	1	0	1	0	0	0	1
95	0	1	0	1	0	0	0	1
96	0	1	0	1	0	0	0	1

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
113	0	1	1	1	0	0	0	1
114	0	1	1	1	0	0	0	1
115	0	1	1	1	0	0	0	1
116	0	1	1	1	0	0	0	1
117	0	1	1	1	0	0	0	1
118	0	1	1	1	0	0	0	1
119	0	1	1	1	0	0	0	1
120	0	1	1	1	0	0	0	1
121	0	1	1	1	0	0	0	1
122	0	1	1	1	0	0	0	1
123	0	1	1	1	0	0	0	1
124	0	1	1	1	0	0	0	1
125	0	1	1	1	0	0	0	1
126	0	1	1	1	0	0	0	1
127	0	1	1	1	0	0	0	1
128	1	0	0	0	0	0	0	0



ADDRESS PLUG
WIRE SIDE

WIRING DIAGRAM
ADDRESS PLUG
WITH ALL WIRES
CONNECTED



BOTTOM VIEW

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: ADDRESS TABLE, 1 THROUGH 128

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 28 APR 99

REVISION

APPR. BY:

SCALE: NONE

01

1150-R04A-115078

REV.	DATE	DESCRIPTION	BY	APPR.
01	08 MAR 05	ADDED BOTTOM VIEW	KQB	

KEY: 0 = WIRE NOT CONNECTED 1 = WIRE IS CONNECTED

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
129	1	0	0	0	0	0	0	1
130	1	0	0	0	0	0	1	0
131	1	0	0	0	0	0	1	1
132	1	0	0	0	0	1	0	0
133	1	0	0	0	0	1	0	1
134	1	0	0	0	0	1	1	0
135	1	0	0	0	0	1	1	1
136	1	0	0	0	1	0	0	0
137	1	0	0	0	1	0	0	1
138	1	0	0	0	1	0	1	0
139	1	0	0	0	1	0	1	1
140	1	0	0	0	1	1	0	0
141	1	0	0	0	1	1	0	1
142	1	0	0	0	1	1	1	0
143	1	0	0	0	1	1	1	1
144	1	0	0	1	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
161	1	0	1	0	0	0	0	1
162	1	0	1	0	0	0	1	0
163	1	0	1	0	0	0	1	1
164	1	0	1	0	0	1	0	0
165	1	0	1	0	0	1	0	1
166	1	0	1	0	0	1	1	0
167	1	0	1	0	0	1	1	1
168	1	0	1	0	1	0	0	0
169	1	0	1	0	1	0	0	1
170	1	0	1	0	1	0	1	0
171	1	0	1	0	1	0	1	1
172	1	0	1	0	1	1	0	0
173	1	0	1	0	1	1	0	1
174	1	0	1	0	1	1	1	0
175	1	0	1	0	1	1	1	1
176	1	0	1	1	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
193	1	1	0	0	0	0	0	1
194	1	1	0	0	0	0	1	0
195	1	1	0	0	0	0	1	1
196	1	1	0	0	0	1	0	0
197	1	1	0	0	0	1	0	1
198	1	1	0	0	0	1	1	0
199	1	1	0	0	0	1	1	1
200	1	1	0	0	1	0	0	0
201	1	1	0	0	1	0	0	1
202	1	1	0	0	1	0	1	0
203	1	1	0	0	1	0	1	1
204	1	1	0	0	1	1	0	0
205	1	1	0	0	1	1	0	1
206	1	1	0	0	1	1	1	0
207	1	1	0	0	1	1	1	1
208	1	1	0	1	0	0	0	0

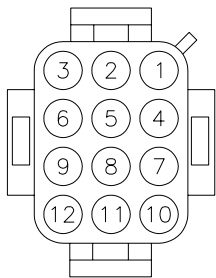
DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
225	1	1	1	0	0	0	0	1
226	1	1	1	0	0	0	1	0
227	1	1	1	0	0	0	1	1
228	1	1	1	0	0	1	0	0
229	1	1	1	0	0	1	0	1
230	1	1	1	0	0	1	1	0
231	1	1	1	0	0	1	1	1
232	1	1	1	0	1	0	0	0
233	1	1	1	0	1	0	0	1
234	1	1	1	0	1	0	1	0
235	1	1	1	0	1	0	1	1
236	1	1	1	0	1	1	0	0
237	1	1	1	0	1	1	0	1
238	1	1	1	0	1	1	1	0
239	1	1	1	0	1	1	1	1
240	1	1	1	1	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
145	1	0	0	1	0	0	0	1
146	1	0	0	1	0	0	1	0
147	1	0	0	1	0	0	1	1
148	1	0	0	1	0	1	0	0
149	1	0	0	1	0	1	0	1
150	1	0	0	1	0	1	1	0
151	1	0	0	1	0	1	1	1
152	1	0	0	1	1	0	0	0
153	1	0	0	1	1	0	0	1
154	1	0	0	1	1	0	1	0
155	1	0	0	1	1	0	1	1
156	1	0	0	1	1	1	0	0
157	1	0	0	1	1	1	0	1
158	1	0	0	1	1	1	1	0
159	1	0	0	1	1	1	1	1
160	1	0	1	0	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
177	1	0	1	1	0	0	0	1
178	1	0	1	1	0	0	1	0
179	1	0	1	1	0	0	1	1
180	1	0	1	1	0	1	0	0
181	1	0	1	1	0	1	0	1
182	1	0	1	1	0	1	1	0
183	1	0	1	1	0	1	1	1
184	1	0	1	1	1	0	0	0
185	1	0	1	1	1	0	0	1
186	1	0	1	1	1	0	1	0
187	1	0	1	1	1	0	1	1
188	1	0	1	1	1	1	0	0
189	1	0	1	1	1	1	0	1
190	1	0	1	1	1	1	1	0
191	1	0	1	1	1	1	1	1
192	1	1	0	0	0	0	0	0

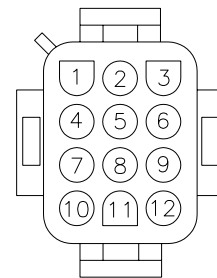
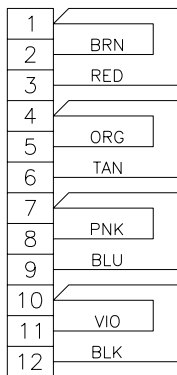
DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
209	1	1	0	1	0	0	0	1
210	1	1	0	1	0	0	1	0
211	1	1	0	1	0	0	1	1
212	1	1	0	1	0	1	0	0
213	1	1	0	1	0	1	0	1
214	1	1	0	1	0	1	1	0
215	1	1	0	1	0	1	1	1
216	1	1	0	1	1	0	0	0
217	1	1	0	1	1	0	0	1
218	1	1	0	1	1	0	1	0
219	1	1	0	1	1	0	1	1
220	1	1	0	1	1	1	0	0
221	1	1	0	1	1	1	0	1
222	1	1	0	1	1	1	1	0
223	1	1	0	1	1	1	1	1
224	1	1	1	0	0	0	0	0

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
241	1	1	1	1	0	0	0	1
242	1	1	1	1	0	0	1	0
243	1	1	1	1	0	0	1	1
244	1	1	1	1	0	1	0	0
245	1	1	1	1	0	1	0	1
246	1	1	1	1	0	1	1	0
247	1	1	1	1	0	1	1	1
248	1	1	1	1	1	0	0	0
249	1	1	1	1	1	0	0	1
250	1	1	1	1	1	0	1	0
251	1	1	1	1	1	0	1	1
252	1	1	1	1	1	1	0	0
253	1	1	1	1	1	1	0	1
254	1	1	1	1	1	1	1	0
255	1	1	1	1	1	1	1	1



ADDRESS PLUG
WIRE SIDE

WIRING DIAGRAM
ADDRESS PLUG
WITH ALL WIRES
CONNECTED



BOTTOM VIEW

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: ADDRESS TABLE, 129 THROUGH 255

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 28 APR 99

REVISION

APPR. BY:

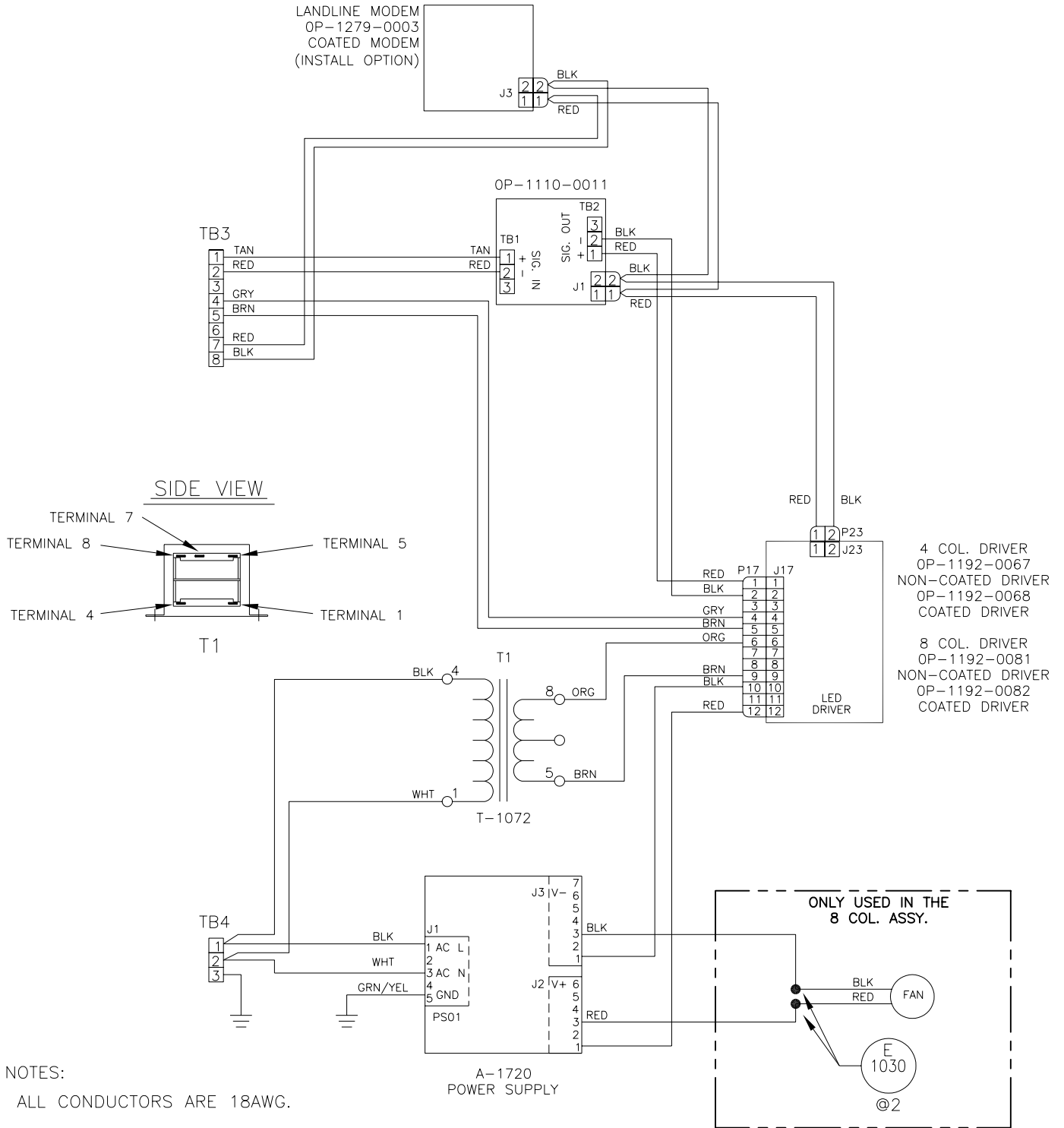
SCALE: NONE

01

1150-R04A-115079

REV.	DATE	DESCRIPTION	BY	APPR.
01	08 MAR 05	ADDED BOTTOM VIEW	KQB	

LANDLINE MODEM
OP-1279-0003
COATED MODEM
(INSTALL OPTION)



4 COL. DRIVER
OP-1192-0067
NON-COATED DRIVER
OP-1192-0068
COATED DRIVER

8 COL. DRIVER
OP-1192-0081
NON-COATED DRIVER
OP-1192-0082
COATED DRIVER

NOTES:
ALL CONDUCTORS ARE 18AWG.

A-1720
POWER SUPPLY

08	17 DEC 03	CHANGED WIRE COLORS OF T1 CONNECTIONS. ADDED SIDE VIEW OF T1.	JBS	
07	29 APR 03	ADDED T1, FOR TIMING.	TAS	MWM
06	24 FEB 03	CHANGED J3 ON POWER SUPPLY TO 7 PINS PER ECO-27985.	AVB	
05	14 JAN 03	CHANGED THE BLU TEXT TO RED ON TB3 CONNECTOR	CME	
04	24 OCT 02	CHANGED 12V DC WIRING CONNECTIONS FROM MASC DRIVER TO SIGNAL SURGE PROTECTOR, LANDLINE MODEM AND TERMINAL BLOCK	JBS	
03	29MAY02	MOVED WIRES GOING INTO PIN 6 & 9 OF P17 TO PIN 10 & 12 OF P17	NMB	
02	06 MAY 02	CHANGED WIRE COLORS FOR TB3 CONNECTIONS	MWM	
01	24APR02	ADDED TB3-7 & 8 CONNECTIONS TO 4 COL. LED DRIVER. ADDED P22 AND J22 ALSO.	THS	
REV.	DATE	DESCRIPTION	BY	APPR.

0A-1279-0086
MULTI PURPOSE HARNESS ASSY.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA TIME LED DISPLAYS

TITLE: SCHEMATIC; MULTIPURPOSE LED DRVR

DES. BY: MMILLER

DRAWN BY: MMILLER

DATE: 08 APR 02

REVISION
08

APPR. BY:
SCALE: 1=1

1279-R03A-165028

OP-1192-0067 UNCOATED OR OP-1192-0068 COATED
4 COLUMN MASC LED DRIVER

J-27 RS232 COM	
PIN	FUNCTION
1	RX-P
2	TX-P
3	GND-N
4	+12V -P
5	DCD-P
6	RESET-P

J19 ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

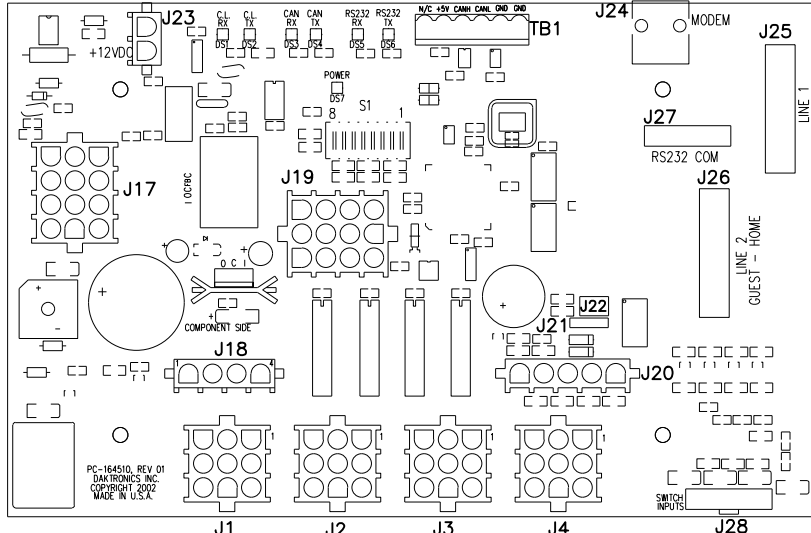
TB1 CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

J24	
PIN	FUNCTION
1	MODEM_RTS-P
2	MODEM_RESET-P
3	MODEM_TX-P
4	GND-N
5	MODEM_RX-P
6	MODEM_DCD-P

J23 +12VDC	
PIN	FUNCTION
1	+12VDC-P
2	GND-N

J17 MAIN	
PIN	FUNCTION
1	CLIN-P
2	CLIN-N
3	232IN-P
4	CLOUT-P
5	CLOUT-N
6	16VAC-P
7	GND-N
8	N/C
9	16VAC-N
10	GND-N
11	N/C
12	+VBB-P

J18 RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT2-N
3	120SW1-N
4	120SW1-P



J25			
FUNCTION	PIN	PIN	FUNCTION
L1_ID0-P	1	20	RED1-P
L1_ID1-P	2	19	GRN1-P
GND-N	3	18	L1_LATCH-P
GND-N	4	17	L1_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L1_CLK-P
GND-N	8	13	GRN3-P
L1_ID2-P	9	12	RED4-P
L1_ID3-P	10	11	GRN4-P

J26			
FUNCTION	PIN	PIN	FUNCTION
L2_ID0-P	1	20	RED1-P
L2_ID1-P	2	19	GRN1-P
GND-N	3	18	L2_LATCH-P
GND-N	4	17	L2_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L2_CLK-P
GND-N	8	13	GRN3-P
L2_ID2-P	9	12	RED4-P
L2_ID3-P	10	11	GRN4-P

J1-4 DIGIT	
PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VBB-P
8	SEGH-N
9	SEGG-N

J20 PROTOCOL	
PIN	FUNCTION
1	GND
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N

J21 ISP	
PIN	FUNCTION
1	VFP-P
2	BKD-P
3	GND-N
4	RESET-P

J28 SWITCH	
PIN	FUNCTION
1	SWITCH1-P
2	SWITCH1-N
3	SWITCH2-P
4	SWITCH2-N
5	SWITCH3-P
6	SWITCH3-N
7	SWITCH4-P
8	SWITCH4-N

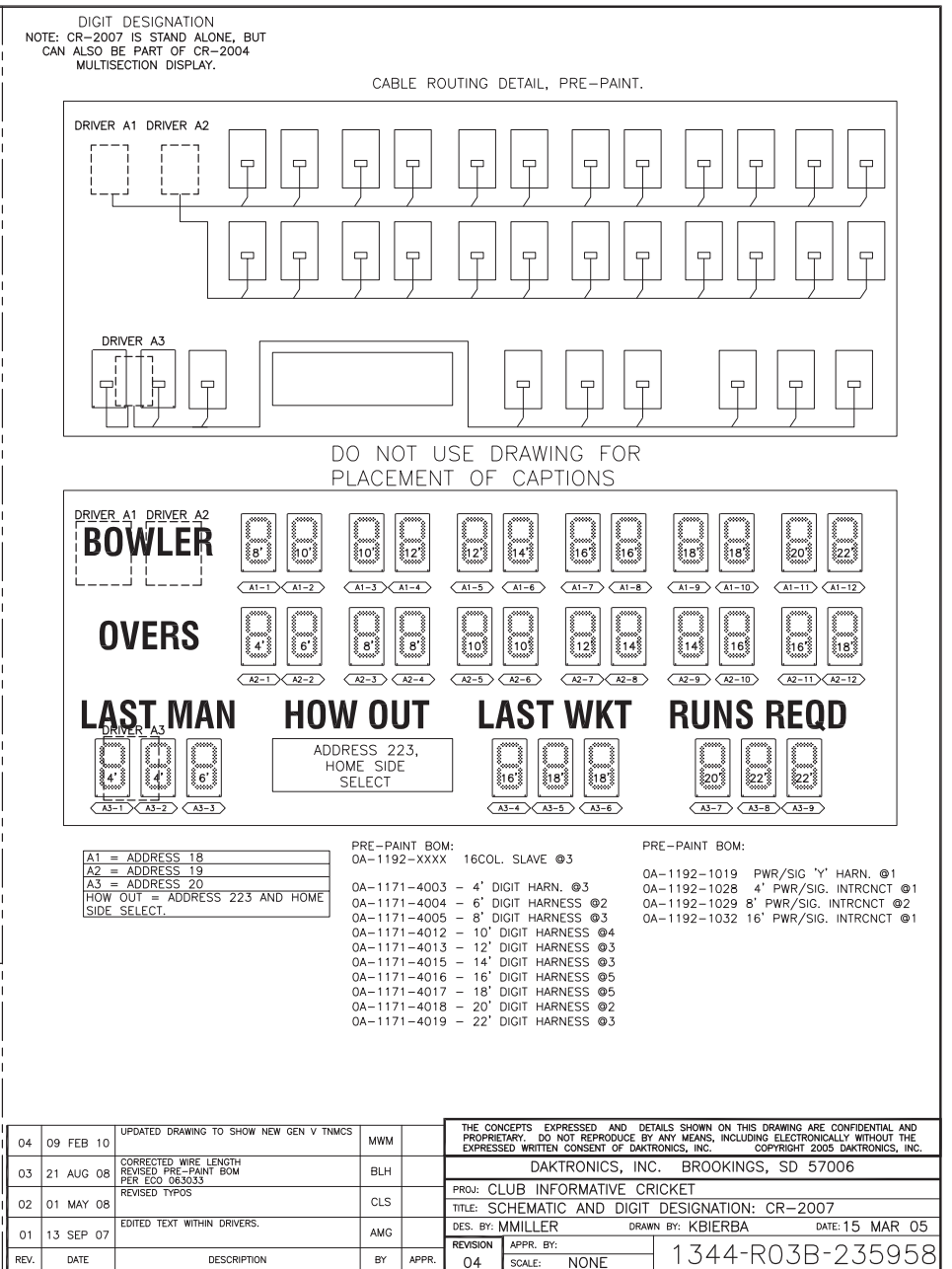
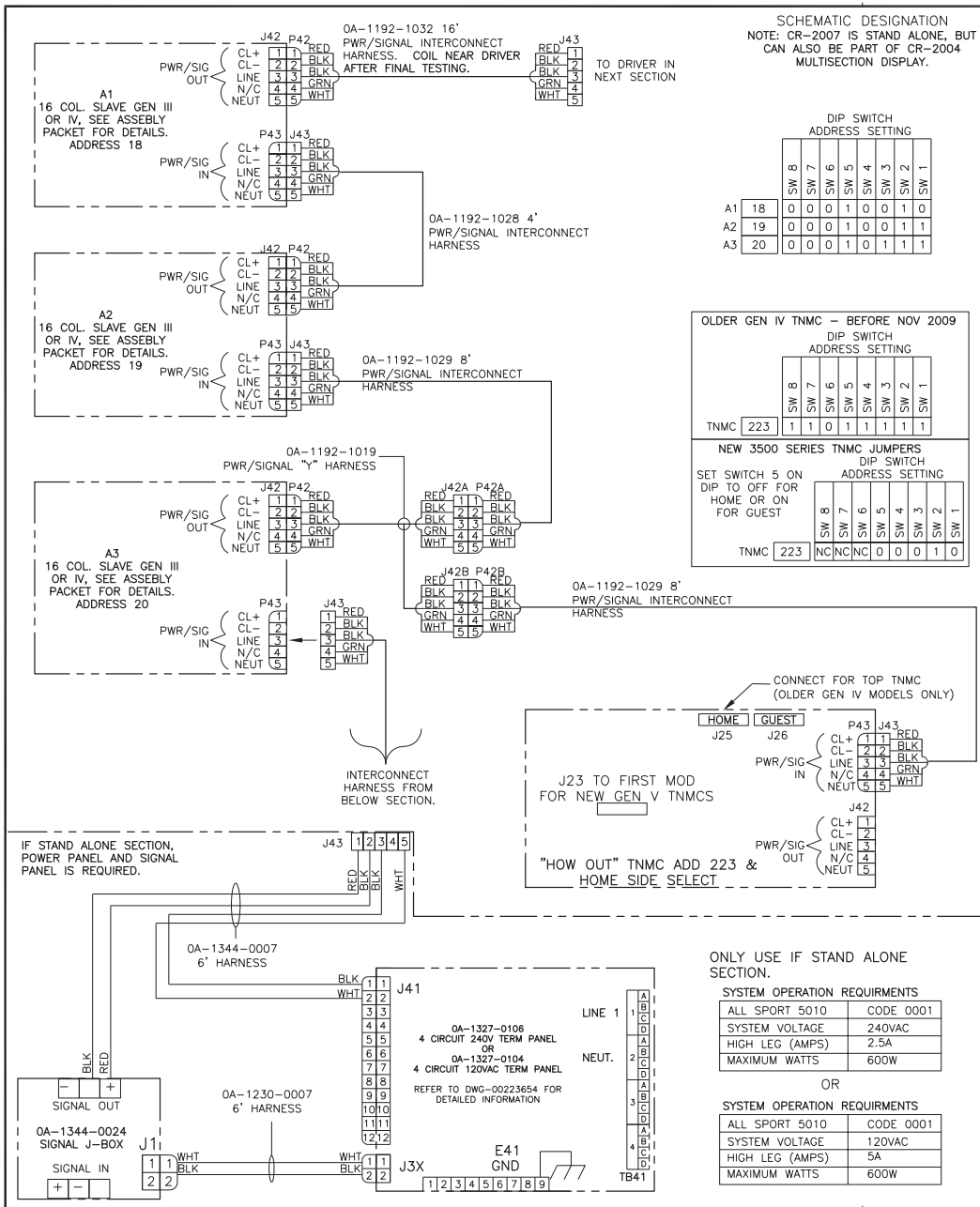
J22 ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

NOTE:

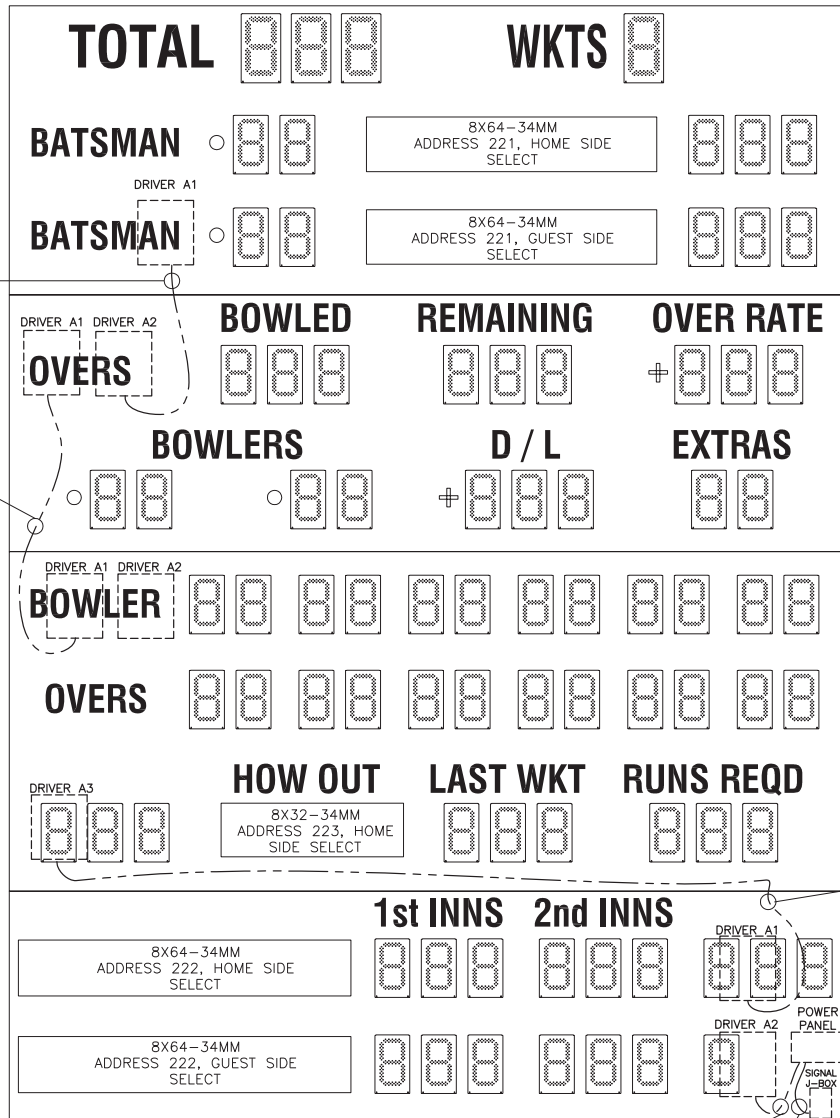
- RED LED CL RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- GREEN LED CL TX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- RED LED CAN RX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- GREEN LED CAN TX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- IF THERE IS NOT A CAN DEVICE CONNECTED TO TB1, CAN RX AND TX LEDS WILL BE ON AND STEADY.
- RED LED RS232 RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED RS232 TX6 WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED POWER INDICATES THE DRIVER HAS POWER

REV	DATE:	CORRECTED S1 PINOUT	BY:
04	01 FEB 13		RBN
3	27 NOV 04	UPDATE DRIVER J-27 FOR CORRECT PIN OUT	BY:
2	16 MAY 03	UPDATE DRIVER FOR LATEST REVISION OF MASC DRIVER.	BY:
1	06 JUN 02	ADDED LED LABELS ADDED NEW NOTES	BY:

<p>DAKTRONICS, INC. BROOKINGS, SD 57006</p>	<p>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 2013 DAKTRONICS, INC.</p>	
	<p>DO NOT SCALE DRAWING</p>	
<p>PROJ: OUTDOOR LED SCOREBOARDS</p>		
<p>TITLE: 4 COLUMN MASC LED DRIVER SPECIFICATIONS</p>		
DESIGN:	DRAWN: JSPAHR	DATE: 29 APR 02
SCALE: 1=2		
SHEET	REV	JOB NO:
	04	P 1192
		FUNC -TYPE-SIZE
		R - 07 - A
		166216



DO NOT USE DRAWING FOR
PLACEMENT OF CAPTIONS



POWER/SIGNAL
INTERCONNECT HARNESS
COILED IN BELOW SECTION.

POWER/SIGNAL
INTERCONNECT HARNESS
COILED IN BELOW SECTION.

A1 = ADDRESS 15
TOP BATSMAN = ADDRESS 221 AND HOME SIDE SELECT.
BTM BATSMAN = ADDRESS 221 AND GUEST SIDE SELECT.
REFER TO 1344-R03B-236704 FOR SCHEMATIC.

A1 = ADDRESS 16
A2 = ADDRESS 17
REFER TO 1344-R03A-236733 FOR SCHEMATIC.

A1 = ADDRESS 18
A2 = ADDRESS 19
A3 = ADDRESS 20
HOW OUT = ADDRESS 223 AND HOME SIDE SELECT.
REFER TO 1344-R03B-235958 FOR SCHEMATIC.

A1 = ADDRESS 21
A2 = ADDRESS 22
TOP NAME = ADDRESS 222 AND HOME SIDE SELECT.
BTM NAME = ADDRESS 222 AND GUEST SIDE SELECT.
REFER TO 1344-R03B-236727 FOR SCHEMATIC.

SYSTEM OPERATION
REQUIREMENTS FOR 240VAC

CR-2004-12 W/TNMC
SPECIFICATIONS FOR LL-2306
MODEL: CR-2004-12 W/TNMC
VOLTS: 240V AC
AMPS: 7.9
MAX WATTS: 1,900

OR

CR-2004-22 W/TNMC
SPECIFICATIONS FOR LL-2306
MODEL: CR-2004-22 W/TNMC
VOLTS: 240V AC
AMPS: 7.9
MAX WATTS: 1,900

SYSTEM OPERATION
REQUIREMENTS FOR 120VAC

CR-2004-11 W/TNMC
SPECIFICATIONS FOR LL-2306
MODEL: CR-2004-11 W/TNMC
VOLTS: 120V AC
AMPS: 15.8
MAX WATTS: 1,900

OR

CR-2004-21 W/TNMC
SPECIFICATIONS FOR LL-2306
MODEL: CR-2004-21 W/TNMC
VOLTS: 120V AC
AMPS: 15.8
MAX WATTS: 1,900

POWER/SIGNAL
INTERCONNECT HARNESS
COILED IN BELOW SECTION.

0A-1344-0007 6' HARNESS.
0A-1230-0007 6' HARNESS.

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: CLUB INFORMATIVE CRICKET	
TITLE: OVERAL LAYOUT; CR-2004, MULTI-SECTION	
DES. BY: MMILLER	DATE: 16 FEB 05
REVISION	APPR. BY:
02	SCALE: NONE
1344-R01B-236615	

02	07 APR 06	ADDED NEW SPEC. LABEL DIAGRAMS.	BJC	
01	21 MAR 06	UPDATED CAPTION LAYOUT FROM PV & VX TO BOWLERS.	KJB	
REV.	DATE	DESCRIPTION	BY	APPR.

SCHMATIC
NOTE: CR-2005 IS STAND ALONE, BUT
CAN ALSO BE PART OF CR-2004
MULTI-SECTION DISPLAY.

OLDER GEN IV TNMC - BEFORE NOV 2009

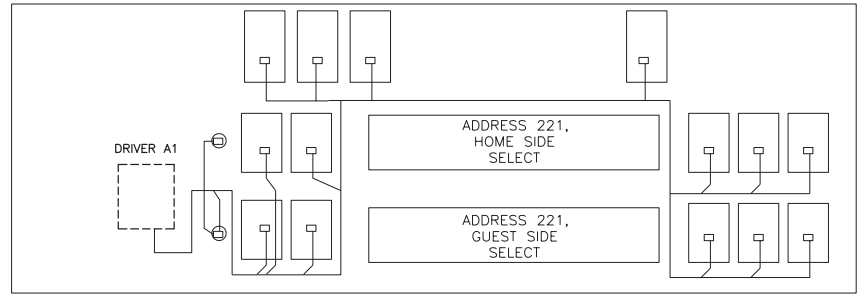
J-19 ADDRESS PLUG									
	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2	
TOP & BTM	223	1	1	0	1	1	1	1	1

NEW 3500 SERIES TNMC JUMPERS
SET SWITCH 5 ON
DIP TO OFF FOR
HOME OR ON
FOR GUEST

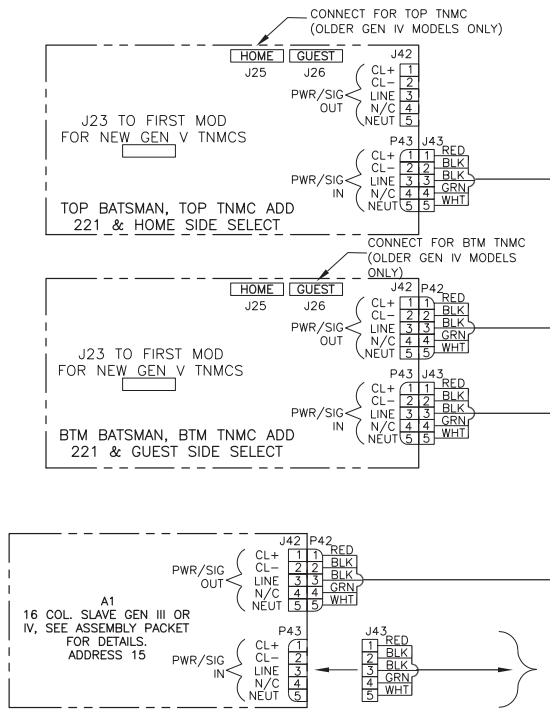
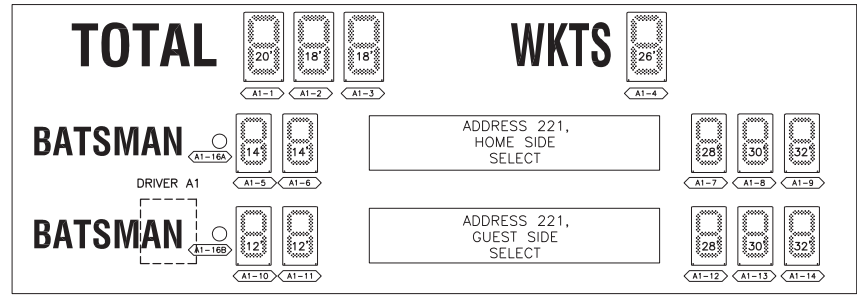
ADDRESS SETTING									
	SW 8	SW 7	SW 6	SW 5	SW 4	SW 3	SW 2	SW 1	
TOP TNMC	221	NC	NC	NC	0	0	0	0	0
BTM TNMC	221	NC	NC	NC	1	0	0	0	0

DIGIT DESIGNATION
NOTE: CR-2005 IS STAND ALONE, BUT
CAN ALSO BE PART OF CR-2004
MULTI-SECTION DISPLAY.

CABLE ROUTING DETAIL, PRE-PAINT.



DO NOT USE DRAWING FOR
PLACEMENT OF CAPTIONS



0A-1192-1029 8'
PWR/SIGNAL INTERCONNECT
HARNESS

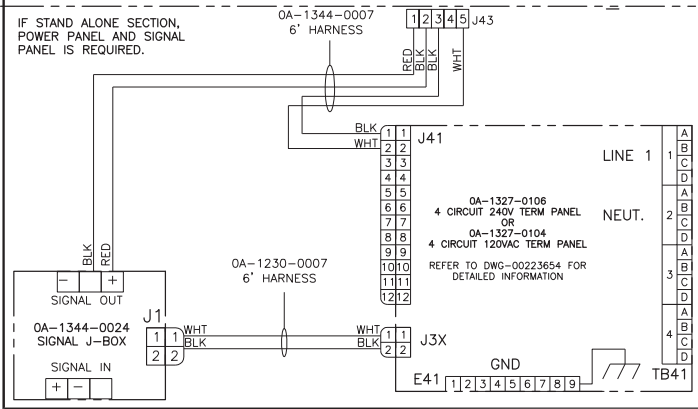
0A-1192-1031 12'
PWR/SIGNAL INTERCONNECT
HARNESS

IF REQUIRED,
INTERCONNECT
HARNESS FROM
BELOW SECTION.

DIP SWITCH
ADDRESS SETTING

	SW 8	SW 7	SW 6	SW 5	SW 4	SW 3	SW 2	SW 1	
A1 15	0	0	0	0	0	1	1	1	1

IF STAND ALONE SECTION,
POWER PANEL AND SIGNAL
PANEL IS REQUIRED.



ONLY USE IF STAND ALONE
SECTION.

SYSTEM OPERATION REQUIREMENTS

ALL SPORT 5010	CODE 0001
SYSTEM VOLTAGE	240VAC
HIGH LEG (AMPS)	2.5A
MAXIMUM WATTS	600W

OR

ALL SPORT 5010	CODE 0001
SYSTEM VOLTAGE	120VAC
HIGH LEG (AMPS)	5A
MAXIMUM WATTS	600W

A1 = ADDRESS 15
TOP BATSMAN = ADDRESS 221 AND
HOME SIDE SELECT.
BTM BATSMAN = ADDRESS 221 AND
GUEST SIDE SELECT.

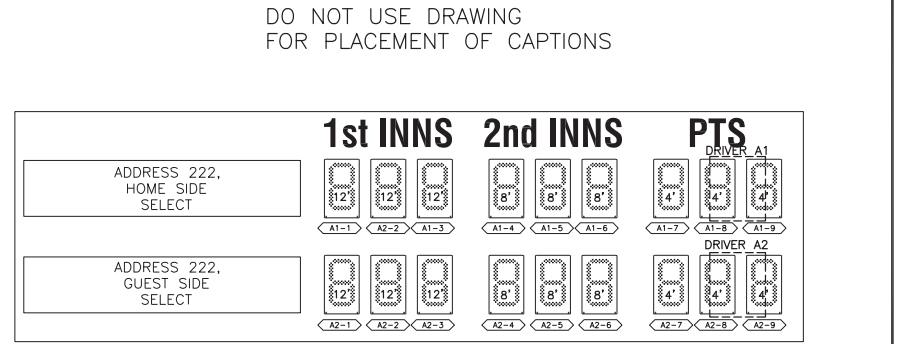
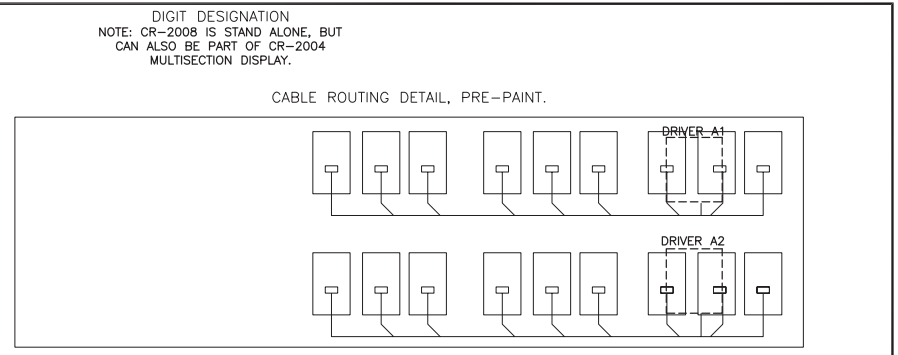
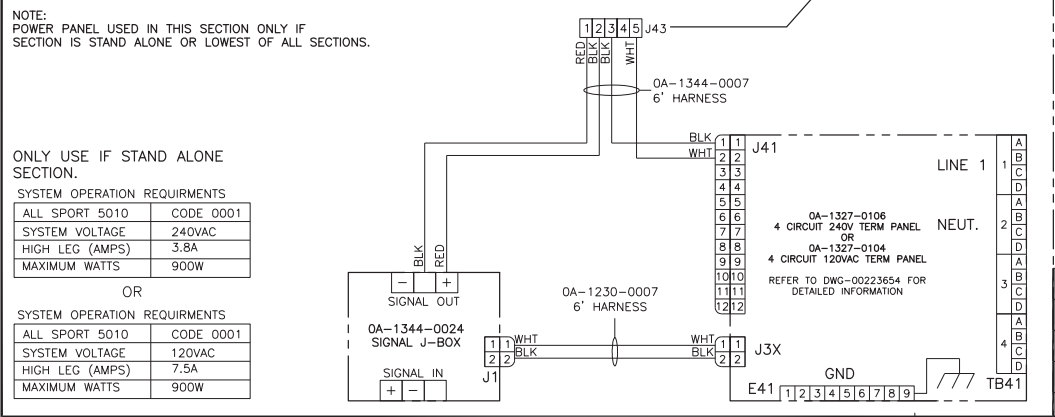
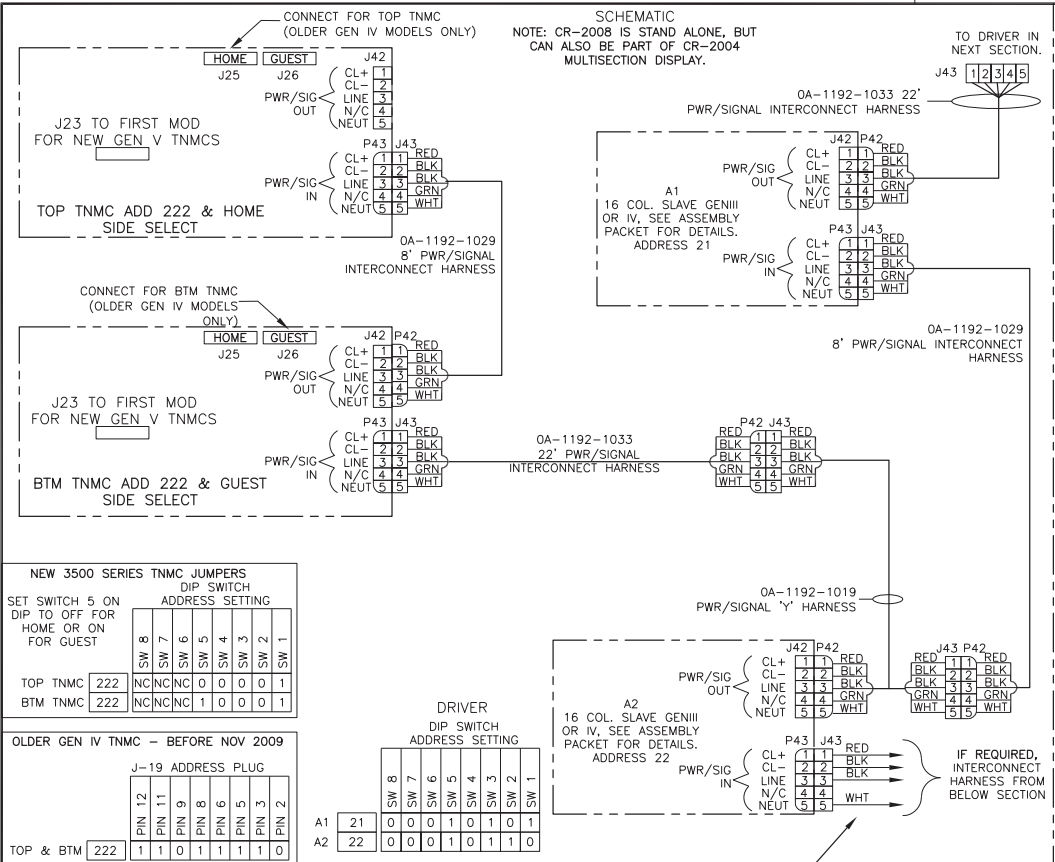
- PRE-PAINT BOM:
0A-1192-XXXX 16COL. SLAVE @1
- 0A-1171-4013 12' DIGIT HARN. @2
 - 0A-1171-4015 14' DIGIT HARN. @2
 - 0A-1171-4017 18' DIGIT HARN. @2
 - 0A-1171-4018 20' DIGIT HARN. @1
 - 0A-1171-4021 26' DIGIT HARN. @1
 - 0A-1171-4022 28' DIGIT HARN. @2
 - 0A-1171-4023 30' DIGIT HARN. @2
 - 0A-1171-4024 32' DIGIT HARN. @2
 - 0A-1344-0026 12' DOT HARN. BATSMAN @1
- 0A-1192-1029 8' PWR/SIG. INTRCNCT @1
0A-1192-1031 12' PWR/SIG. INTRCNCT @1

REV.	DATE	DESCRIPTION	BY	APPR.
05	09 FEB 10	UPDATED TNMC'S TO SHOW OLDER AND NEW TNMC WITH ADDRESS AND SIDE SELECT METHODS	MWM	
04	01 MAY 08	REVISED TYPES	CLS	
03	21 MAR 08	FIXED ADDRESS 15	KZB	
02	13 SEP 07	EDITED TEXT WITHIN MASTER & SLAVE DRIVERS.	AMG	
01	16 JUN 05	CHG PLUG DESIGNATION TO A16 FROM A15	KQB	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CLUB INFORMATIVE CRICKET
TITLE: SCHEMATIC AND DIGIT DESIGNATION: CR-2005
DES. BY: MILLER DRAWN BY: KBIERBA DATE:
REVISION APPR. BY:
SCALE: NONE 1344-R03B-236704



A1 = ADDRESS 21	
A2 = ADDRESS 22	
TOP NAME = ADDRESS 222 AND HOME SIDE SELECT.	
BTM NAME = ADDRESS 222 AND GUEST SIDE SELECT.	

PRE-PAINT BOM:
OA-1192-XXXX 16COL. SLAVE @2

OA-1171-4003 4' DIGIT HARN. @4
OA-1171-4004 6' DIGIT HARN. @2
OA-1171-4005 8' DIGIT HARN. @6
OA-1171-4012 10' DIGIT HARN. @2
OA-1171-4013 12' DIGIT HARN. @6

OA-1192-1029 8' PWR/SIG. INTERCONNECT @1
OA-1192-1032 16' PWR/SIG. INTERCONNECT @1
OA-1192-1033 22' PWR/SIG. INTERCONNECT @2

04	09 FEB 10	UPDATED DRAWING TO SHOW NEW GEN V TNMC DETAILS	MWM		
03	01 MAY 08	REVISED TYPES	CLS		
02	13 SEP 07	EDITED TEXT WITHIN DRIVERS.	AMG		
01	17 MAR 06	ADDED 240VAC CONVERSION KITS	KZB		
REV.	DATE	DESCRIPTION	BY	APPR.	

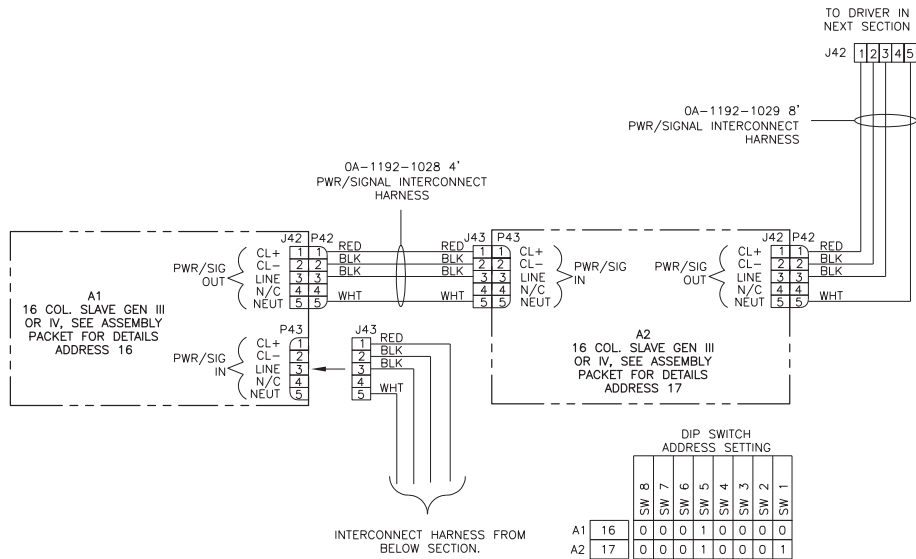
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DAKTRONICS, INC. BROOKINGS, SD 57006

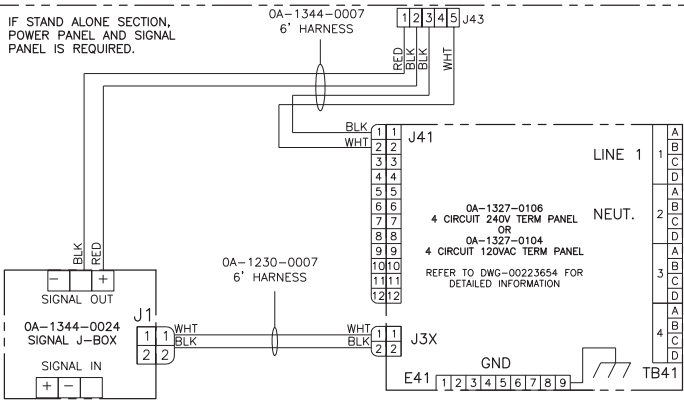
PROJ: CLUB INFORMATIVE CRICKET
TITLE: SCHEMATIC AND DIGIT DESIGNATION: CR-2008
DES. BY: MMILLER DRAWN BY: KBIERBA DATE: 15 MAR 05

REVISION APPR. BY: SCALE: NONE 1344-R03B-236727

SCHEMATIC
NOTE: CR-2006 CAN BE STAND ALONE,
BUT CAN ALSO BE PART OF CR-2004
MULTISECTION DISPLAY.



IF STAND ALONE SECTION,
POWER PANEL AND SIGNAL
PANEL IS REQUIRED.



ONLY USE IF STAND ALONE
SECTION.

SYSTEM OPERATION REQUIREMENTS

ALL SPORT 5010	CODE 0001
SYSTEM VOLTAGE	240VAC
HIGH LEG (AMPS)	2.5A
MAXIMUM WATTS	600W

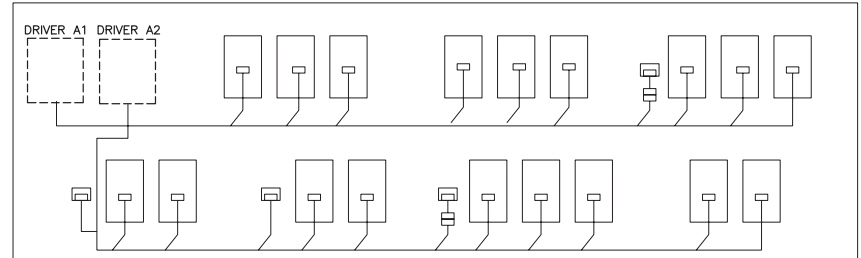
OR

SYSTEM OPERATION REQUIREMENTS

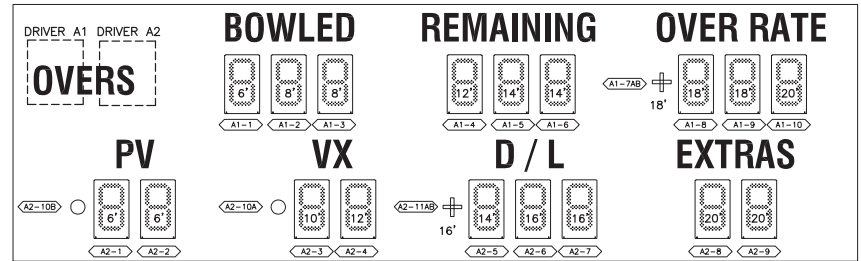
ALL SPORT 5010	CODE 0001
SYSTEM VOLTAGE	120VAC
HIGH LEG (AMPS)	5A
MAXIMUM WATTS	600W

DIGIT DESIGNATION
NOTE: CR-2006 CAN BE STAND ALONE,
BUT CAN ALSO BE PART OF CR-2004
MULTISECTION DISPLAY.

CABLE ROUTING DETAIL, PRE-PAINT



DO NOT USE DRAWING FOR
PLACEMENT OF CAPTIONS.



A1 = ADDRESS 16
A2 = ADDRESS 17

PRE-PAINT BOM:

- OA-1192-2253 16COL. SLAVE @2
- OA-1171-4004 6' DIGIT HARN. @3
- OA-1171-4005 8' DIGIT HARN. @2
- OA-1171-4012 10' DIGIT HARN. @1
- OA-1171-4013 12' DIGIT HARN. @2
- OA-1171-4015 14' DIGIT HARN. @3
- OA-1171-4016 16' DIGIT HARN. @3
- OA-1171-4017 18' DIGIT HARN. @3
- OA-1171-4018 20' DIGIT HARN. @3
- OA-1344-0026 12' DOT HARN. PV/VX @1
- OA-1344-0027 2' +/- INDICATOR HARN @2
- OA-1192-1028 4' PWR/SIG. INTRCNCT @1
- OA-1192-1029 8' PWR/SIG. INTRCNCT @1

REV.	DATE	DESCRIPTION	BY	APPR.
05	12 AUG 08	UPDATED LOWER DIGIT HARNESSES TO NEW LENGTHS PER MANUF. AND ECO 63036	MWM	
04	01 MAY 08	REVISED TYPOLS	CLS	
03	13 SEP 07	EDITED TEXT WITHIN DRIVERS.	AMG	
02	5 APR 06	CHANGED OVER RATE + FROM A2-7AB TO A1-7AB	DMD	
01	16 JUN 05	SWAPPED DESIGNATION FOR A2-10A AND A2-10B	KQB	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CLUB INFORMATIVE CRICKET

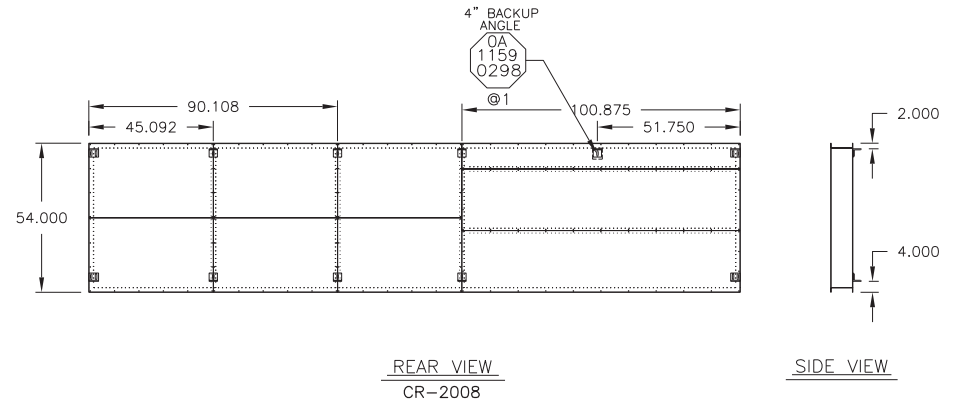
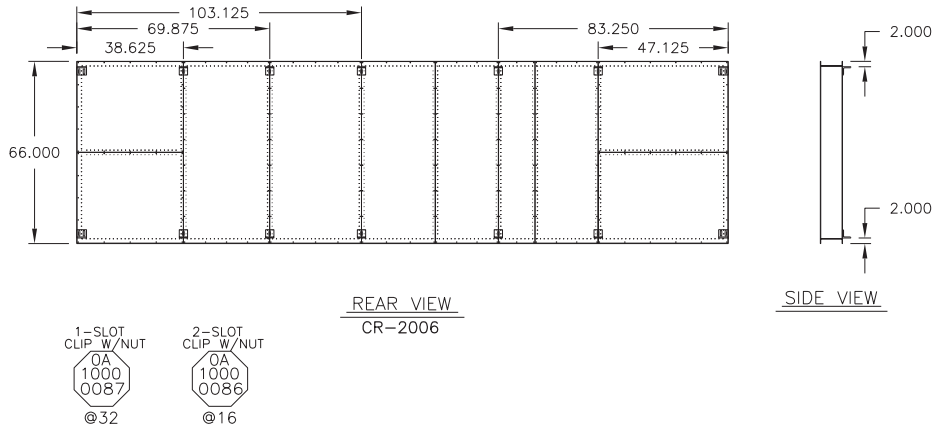
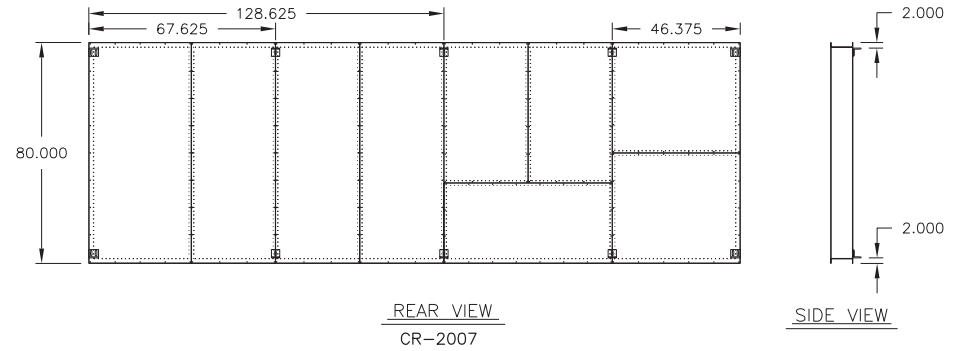
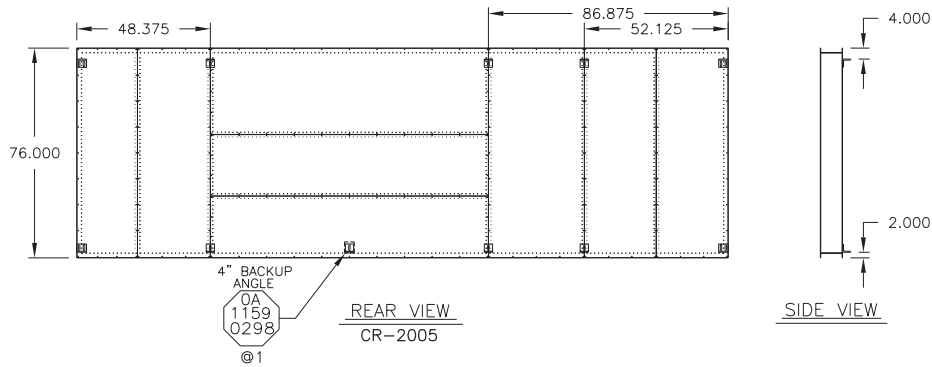
TITLE: SCHEMATIC AND DIGIT DESIGNATION: CR-2006

DES. BY: MILLER DRAWN BY: KBIERBA DATE: 15 MAR 05

REVISION APPR. BY:

SCALE: NONE

1344-R03B-236733



NOTES:

- DIMENSIONS TO CLIPS ARE TO THE CENTER OF THE CLIP.
- USE 2-SLOT CLIPS ON THE DISPLAY ENDS, AND 1-SLOT CLIP ANGLES BETWEEN THEM.
- LOCATION OF CLIP ANGLES IS VERTICALLY CRITICAL.

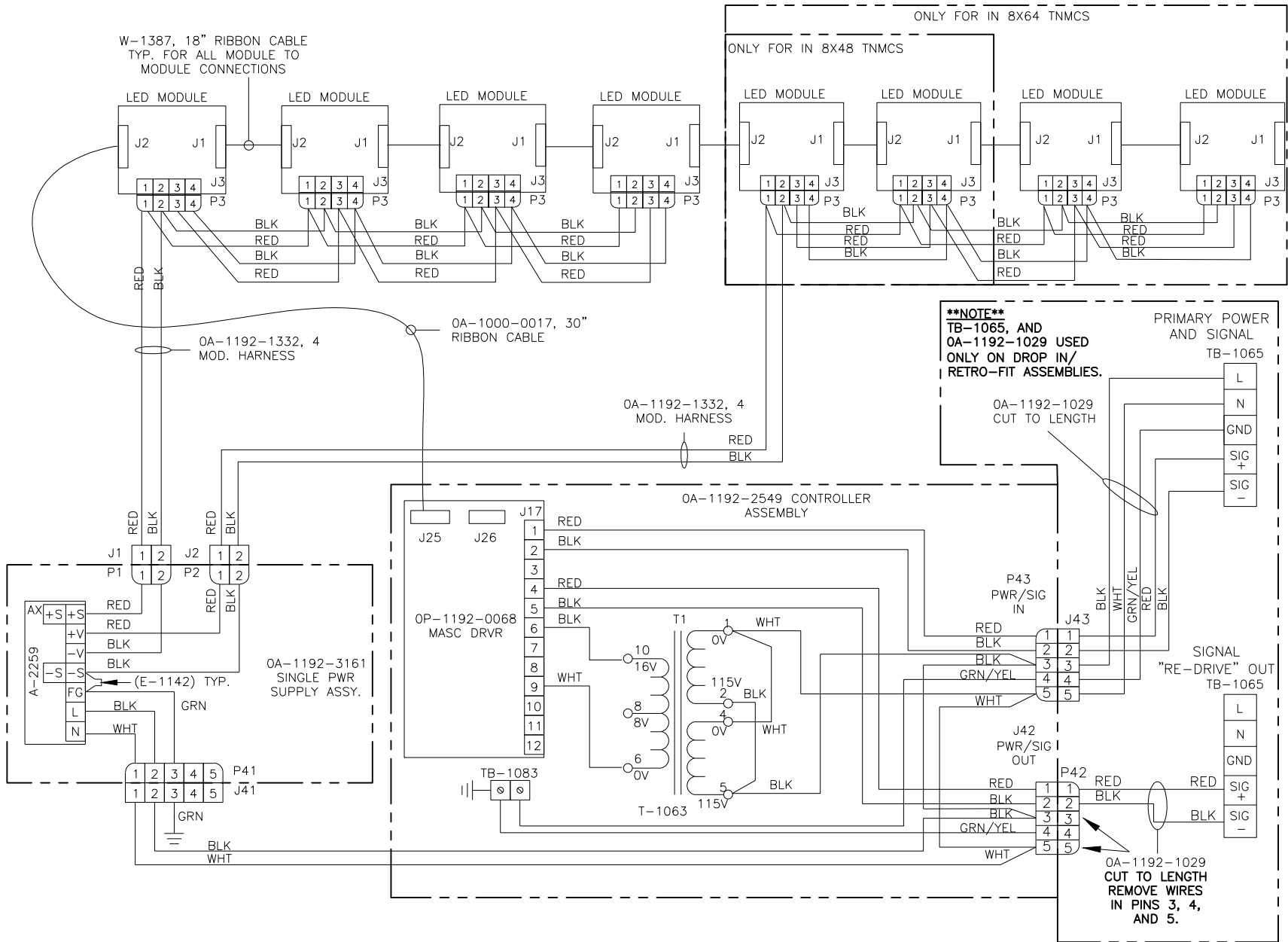
* CONTACT PROJECT ENGINEER FOR CLIP ANGLE DIMENSIONS. REFER TO PROJECT BOM FRONT PAGE FOR THE PE.

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2005 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CLUB INFORMATIVE CRICKET
TITLE: CLIP DWG: CR-2004
DES. BY: TJOHNSON DRAWN BY: TJOHNSON DATE: 06 APR 05
REVISION APPR. BY: SCALE: 1=45
02 1344-E10B-238471

REV.	DATE	DESCRIPTION	BY	APPR.
02	06 NOV 08	REMOVED CLIP ANGLE INCR-2005, 2008 AS PER ECO-63030	KN	
01	09 JUN 05	ADDED MEASUREMENTS TO THE SIDE VIEWS TO SHOW CLIP PLACEMENT	EKT	



- OA-1192-3165 8X32 34MM AMBER TNMC G4
- OA-1192-3167 8X48 34MM AMBER TNMC G4
- OA-1192-XXX 8X64 34MM AMBER TNMC G4
- OA-1192-3229 8X32 34MM DROP IN/RETROFIT TNMC G4
- OA-1192-3231 8X48 34MM DROP IN/RETROFIT TNMC G4
- OA-1192-XXXX 8X64 34MM DROP IN/RETROFIT TNMC G4

REV	DATE	DESCRIPTION	BY	CHKD
REV 06	10 JUN 16	PER EC-2142, REPLACED A-1633 W/ A-2259	BY: KEO	
REV 05	16 SEP 09	ADDED MORE DETAIL TO POWER SUPPLY PER ECO 9684	BY: MWM	
REV 04	10 APR 07	ADDED TB-1065 GND TERMINAL BLOCK AND GROUND WIRES	BY: DMD	
REV 03	07 NOV 06	UPDATED TITLE TO INCLUDE 34 MM	BY: SAL	
REV 02	14 FEB 06	UPDATED PART NUMBERS AND EXPANDED DRAWING TO COVER 8MM OPTION	BY: MWM	
REV 01	01 DEC 05	CHANGED MOD PWR HARNESS FROM 2 PIN TO 4 PIN HARNESS	BY: SAC	

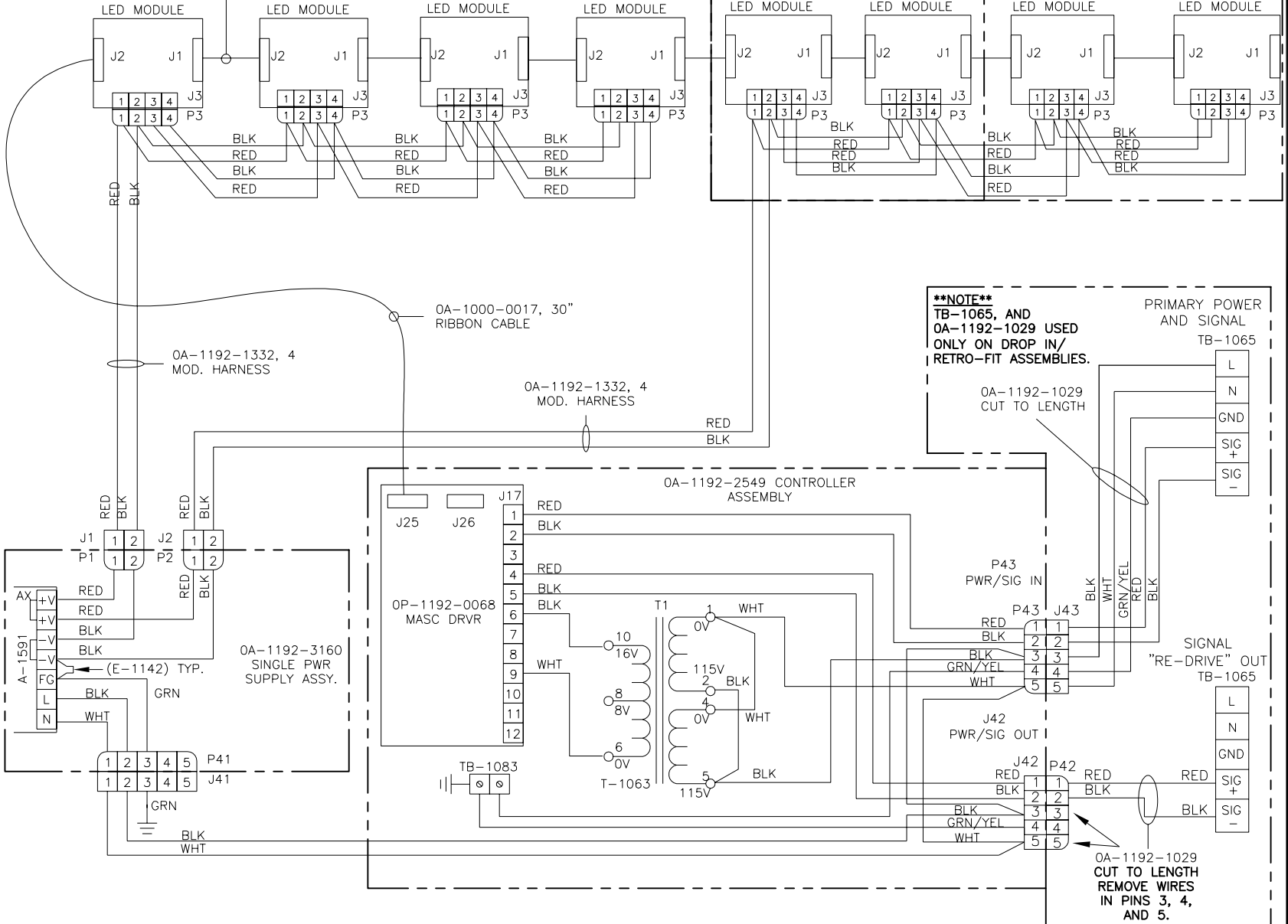
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THIRD ANGLE PROJECTION

PROJECT: OUTDOOR LED DIGIT SCOREBOARDS			
TITLE: SCHEMATIC: 34 MM AMBER TNMC GEN IV			
DATE: 31 AUG 05	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: NONE	DO NOT SCALE DRAWING		06
DESIGN: MMILLER	JOB NO. P1192	FUNC - TYPE - SIZE R - 01 - A	
DRAWN: DDINING	252645		

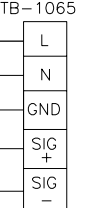
- 0A-1192-3164 8X32 34MM RED TNMC G4
- 0A-1192-3166 8X48 34MM RED TNMC G4
- 0A-1192-XXX 8X64 34MM RED TNMC G4
- 0A-1192-3228 8X32 34MM DROP IN/RETROFIT TNMC G4
- 0A-1192-3230 8X48 34MM DROP IN/RETROFIT TNMC G4
- 0A-1192-XXXX 8X64 34MM DROP IN TNMC G4

W-1387, 18" RIBBON CABLE
TYP. FOR ALL MODULE TO
MODULE CONNECTIONS

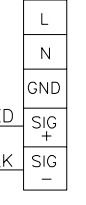


****NOTE****
TB-1065, AND
OA-1192-1029 USED
ONLY ON DROP IN/
RETRO-FIT ASSEMBLIES.

PRIMARY POWER
AND SIGNAL



SIGNAL
"RE-DRIVE" OUT
TB-1065



OA-1192-1029
CUT TO LENGTH
REMOVE WIRES
IN PINS 3, 4,
AND 5.

04	09 APR 07	ADDED TB-1065 AND GND ON J42, & P43	DMD
03	07 NOV 06	UPDATED TITLE TO INCLUDE 34 MM	SAL
02	08 MAR 06	UPDATED DETAILS TO SHOW 64 LONG	MMM
01	01 DEC 05	CHANGE POWER HARNESS TO MOD FROM 2 PIN TO 4 PIN	SJC
REV.	DATE	DESCRIPTION	BY

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PROJ: OUTDOOR LED SCOREBOARDS
DAKTRONICS, INC. BROOKINGS, SD 57006

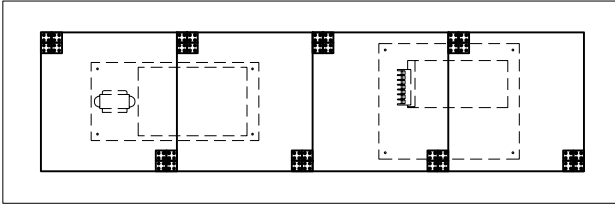
TITLE: SCHEMATIC; 34 MM RED TNMC GEN IV

DES. BY: DRAWN BY: DDINING DATE: 30 AUG 05

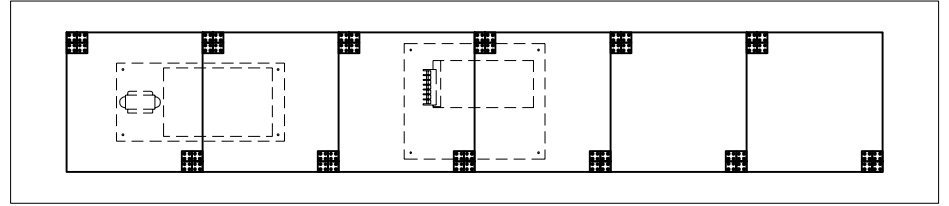
REVISION APPR. BY: SCALE: 1192-R01A-252681

REV.	01	DATE	20 DEC 07	DESCRIPTION	UPDATED DRAWING TO SHOW 864 TNMC MODELS.	BY	MMM	APPR.	
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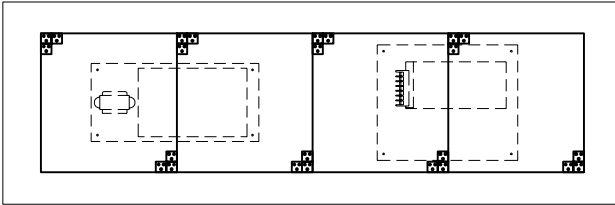
832 AMBER LED TNMC
OA-1192-3165



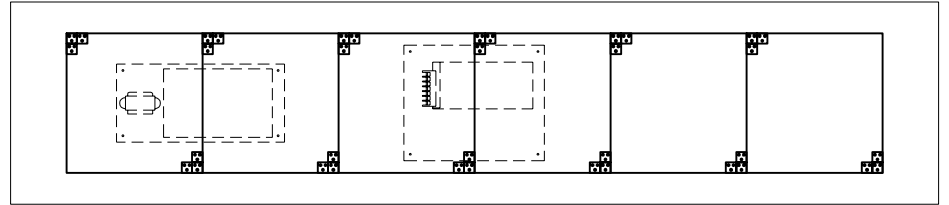
848 AMBER LED TNMC
OA-1192-3166



832 RED LED TNMC
OA-1192-3164

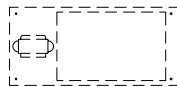
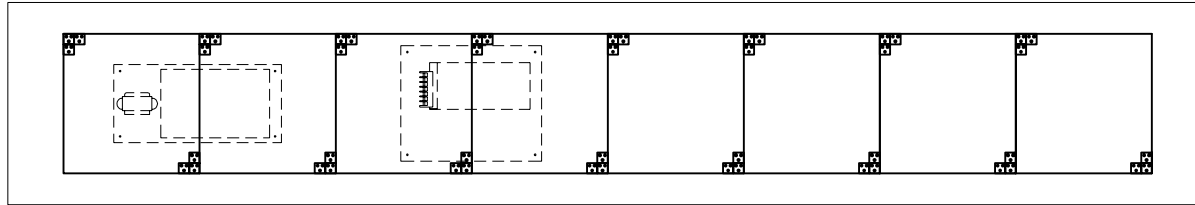


848 RED LED TNMC
OA-1192-3167



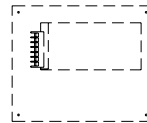
864 AMBER LED TNMC
OA-1192-3295

864 RED LED TNMC
OA-1192-3294



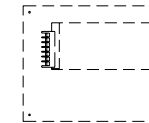
TNMC CONTROLLER
OA-1192-2549

USED IN RED & AMBER LED TNMCs



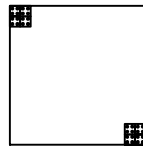
SINGLE POWER SUPPLY ASSEMBLY
OA-1192-3161

USED IN AMBER LED TNMCs

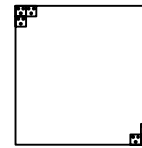


SINGLE POWER SUPPLY ASSEMBLY
OA-1192-3160

USED IN RED LED TNMCs



AMBER LED TNMC MODULE
OA-1208-4001
USED IN AMBER LED TNMCs



RED LED TNMC MODULE
OA-1208-4000
USED IN RED LED TNMCs

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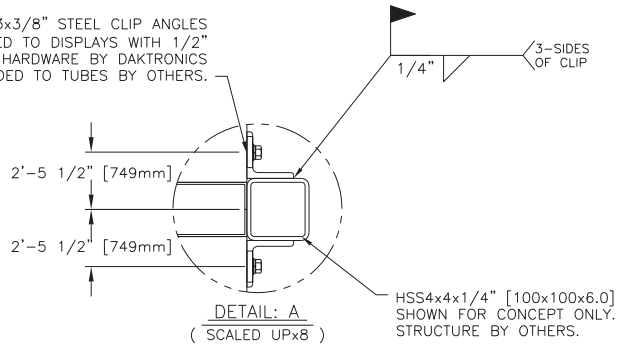
PROJ.: OUTDOOR LED SCOREBOARDS
DAKTRONICS, INC. BROOKINGS, SD 57006

TITLE: COMPONENT LOC.: 832/842/864 RED/AMB LED TNMC G4

DES. BY: KBRICKER DRAWN BY: KBRICKER DATE: 08NOV05

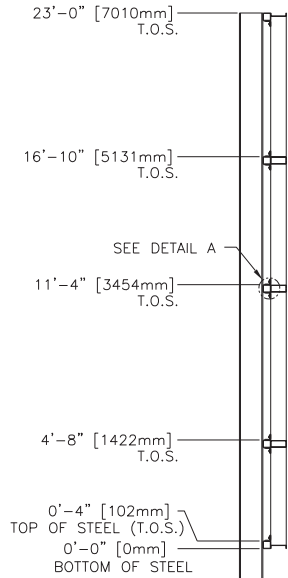
REVISION 01 APPR. BY: SCALE: 1=15 1192-R08A-257029

L3x3x3/8" STEEL CLIP ANGLES
BOLTED TO DISPLAYS WITH 1/2"
GRADE-5 HARDWARE BY DAKTRONICS
AND WELDED TO TUBES BY OTHERS.

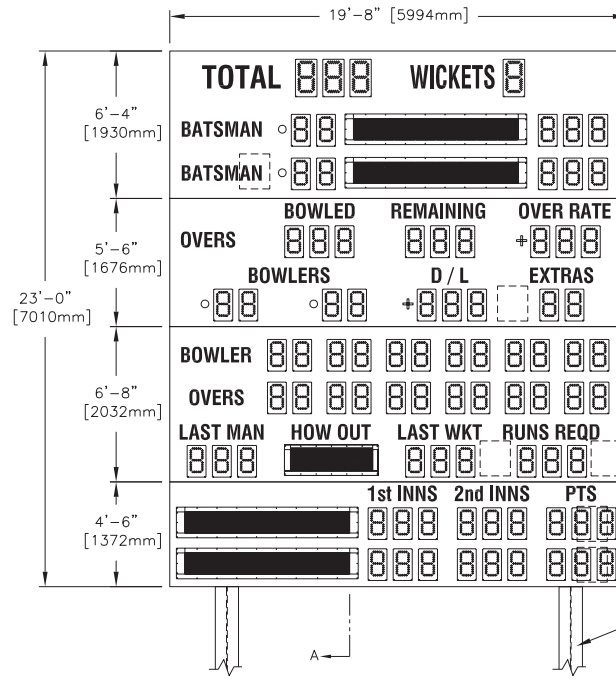


NOTES:

- 1.0 GENERAL NOTES
 1.1 THE STRUCTURAL / SHOP DRAWINGS MUST BE APPROVED BY THE CUSTOMER AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE LOCATION OF CONSTRUCTION BEFORE THEY CAN BE USED FOR FABRICATION OR ERECTION.
 1.2 ALL DIMENSIONS ARE IN FEET AND INCHES [MILLIMETERS].
 1.3 REFER TO INSTALLATION AND MAINTENANCE MANUAL FOR COMPLETE INSTALLATION INSTRUCTIONS.
 1.4 REFER TO DAKTRONICS PROPOSAL DRAWING & SALES LITERATURE FOR DISPLAY SPECIFICATIONS.
 1.5 ESTIMATED POWER DEMAND FOR THE DISPLAY IS 2,550 WATTS, 11 AMPS AT 240 VAC.
- 2.0 DISPLAY NOTES
 2.1 DISPLAY WILL SHIP IN (4) FOUR SECTIONS.
 2.2 DAKTRONICS EQUIPMENT ARE OF ALUMINUM CONSTRUCTION.
 2.3 SCOREBOARD HAS FRONT ACCESS FOR ELECTRONICS AND POWER/SIGNAL TERMINALS.
 2.4 LIFT EYES ARE PROVIDED BY DAKTRONICS IN EACH SECTION. REMOVE LIFT EYES AFTER THE INSTALLATION OF THE SECTION AND PLUG HOLES WITH BOLTS & SILICONE.
 2.5 WHEN LIFTING SECTIONS USE A SPREADER BEAM TO DISTRIBUTE WEIGHT USING ALL LIFT EYES PROVIDED BY DAKTRONICS.
 2.6 ALL WEIGHTS ARE AN APPROXIMATION.
- 3.0 PROJECT RESPONSIBILITY
 3.1 ALL SUBCONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO INSTALLATION.
 3.2 ALL SUBCONTRACTORS SHALL PERFORM WORK IN ACCORDANCE WITH OSHA REQUIREMENTS AND ANY LOCAL CODES THAT APPLY.
 3.3 EACH SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY.
 3.4 ERECTION SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND PROVIDING TEMPORARY BRACING.
 3.5 EACH SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF THEIR WASTE MATERIALS ON THE JOBSITE.
 3.6 LANDSCAPING BY CUSTOMER.
 3.7 SOIL DATA TO BE USED IN FOUNDATION DESIGN BY CUSTOMER.



SECTION: A-A



FRONT VIEW

CR-2005
APPROXIMATE WEIGHT
500 lbs. [226.80 kgs.]

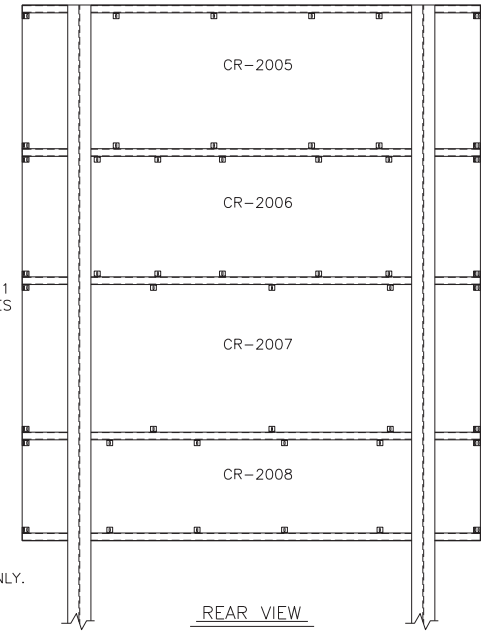
CR-2006
APPROXIMATE WEIGHT
440 lbs. [199.60 kgs.]

CR-2007
APPROXIMATE WEIGHT
530 lbs. [240.40 kgs.]

CR-2008
APPROXIMATE WEIGHT
360 lbs. [163.30 kgs.]

REFER TO
DRAWING 238471
FOR CLIP STYLES
AND LOCATIONS

SUPPORT STRUCTURE SHOWN FOR CONCEPT ONLY.
SUPPORT STRUCTURE TO BE DESIGNED AND PROVIDED BY OTHERS.



REAR VIEW

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CLUB INFORMATIVE CRICKET
 TITLE: SHOP DWG, CR-2004-11/-21, CLP MTG
 DES. BY: BCURTIS DRAWN BY: BCURTIS DATE: 05 APR 06

REV.	DATE	DESCRIPTION	BY	APPR.
00				

REVISION APPR. BY: SCALE: 3/16"=1' 1344-E10B-268714

LED DRIVER IV
 OP-1192-0383, 16 COL
 OP-1192-0384, 16 COL, AC

REFER TO DWGS
 A-115078 & A-115079
 FOR ADDRESS SETTINGS

REFER TO DWGS
 A-290261 & A-290689

S1 ADDRESS
 DIP SWITCH PACKAGE

J1-16 DIGIT JACKS

PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VBB-P
8	SEGH-N
9	SEGG-N

J17 PWR/SIG

PIN	FUNCTION
1	SIG-P
2	SIG-N (232-IN)
3	SIG 2-P(232-GND)
4	CLOUT-P
5	CLOUT-N
6	16VAC-N
7	GND-N
8	EARTH-N
9	16VAC-P
10	GND-N
11	+VDD-P
12	+VBB-P

J22 RC-100 RADIO

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	RX_INPUT-P

J21 2.4GHz RADIO

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	RX_INPUT-P

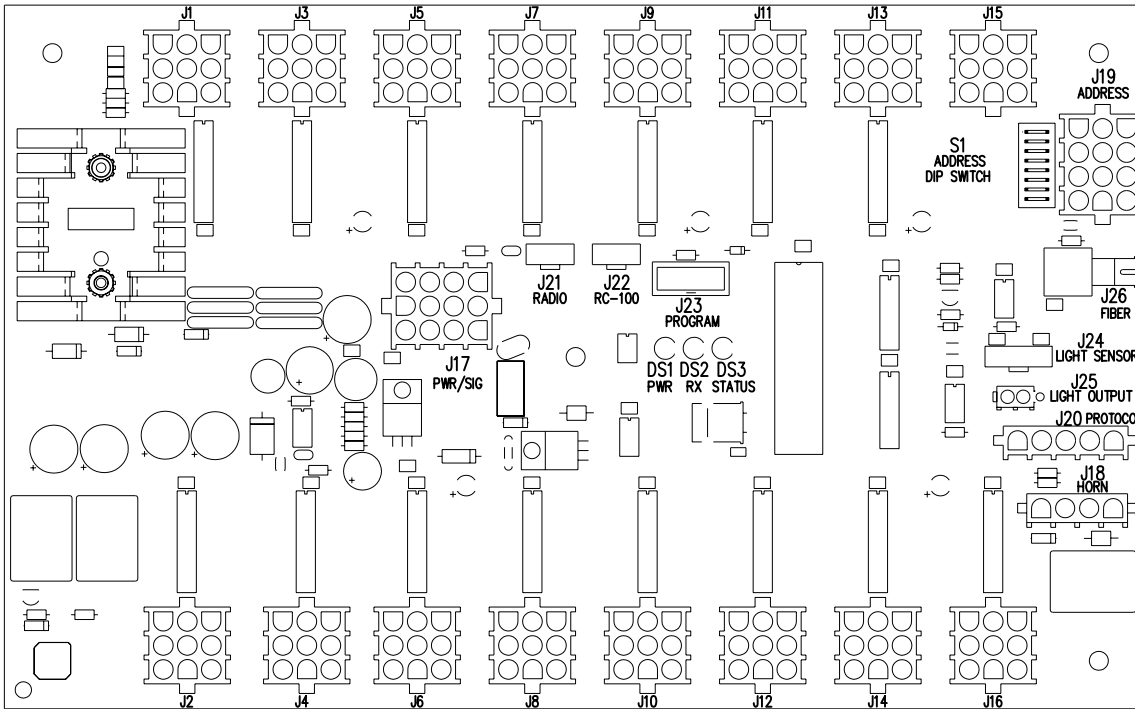
J23 PROGRAM

PIN	FUNCTION
1	DATA
2	/RESET
3	N/C
4	GND-N
5	CLK
6	GND-N
7	N/C
8	+5V-P
9	N/C
10	+5V-P

J19 ADDRESS

PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

SW #	FUNCTION
1	ADD0
2	ADD1
3	ADD2
4	ADD3
5	ADD4
6	ADD5
7	ADD6
8	ADD7



J26 FIBER RX

PIN	FUNCTION
1	N/C
2	+5V-P
3	GND-N
4	N/C
5	N/C
6	RX_INPUT-P
7	GND-N
8	N/C

J24 LIGHT SENSOR

PIN	FUNCTION
1	LIGHT_IN-P
2	LIGHT_IN-N
3	+5V-P
4	GND-N
5	GND-N
6	N/C

J25 LIGHT OUT- NEXT DRIVER

PIN	FUNCTION
1	LIGHT_OUT-P
2	LIGHT_OUT-N

REFER TO DWG A-115081
 FOR PROTOCOL SETTINGS

J20 PROTOCOL

PIN	FUNCTION
1	GND-N
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N (TOD)

J18 HORN

PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT-N
3	120SW-P
4	120SW-N

NOTES:

- WITH NO ADDRESS SELECTED, DRIVER WILL DEFAULT TO A/S 4000 PROTOCOL.
- GREEN LED DS1 INDICATES THAT THE DRIVER HAS POWER.
- RED LED DS2 WILL FLICKER WHEN THE DRIVER RECEIVES SIGNAL.
- AMBER LED DS3 WILL BLINK WHEN THE DRIVER IS RUNNING.
- IF DS3 IS ON OR OFF CONTINUOUSLY THE MICROCONTROLLER IS NOT WORKING.
- REFER TO DRAWING A-128429 FOR CURRENT LOOP REDRIVE SPECIFICATIONS.
- REFER TO DRAWING A-115081 FOR J20 PROTOCOL SETTINGS.
- REFER TO DRAWINGS A-115078,115079 FOR J19 ADDRESS SETTINGS.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:	SPECIFICATIONS; LED DRIVER IV, 16 COL		
DES. BY:	DRAWN BY:	DATE:	
DES. BY:	DRAWN BY: DULSCHM	DATE: 09 OCT 06	
REVISION	APPR. BY:	1192-R04A-288137	
02	SCALE: 1 = 2		

REV.	DATE	DESCRIPTION	BY	APPR.
02	30 NOV 06	ADDED ADDRESS SWITCH S1 TO DRAWING	DJU	
01	26 OCT 06	RESIZED TEXT SO THAT IT WAS EASIER TO READ, AND CLARIFIED FUNCTIONS OF EACH JACK.	AFL	

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
01	0 0 0 0 0 0 0 1
02	0 0 0 0 0 0 1 0
03	0 0 0 0 0 0 1 1
04	0 0 0 0 0 1 0 0
05	0 0 0 0 0 1 0 1
06	0 0 0 0 0 1 1 0
07	0 0 0 0 0 1 1 1
08	0 0 0 0 1 0 0 0
09	0 0 0 0 1 0 0 1
10	0 0 0 0 1 0 1 0
11	0 0 0 0 1 0 1 1
12	0 0 0 0 1 1 0 0
13	0 0 0 0 1 1 0 1
14	0 0 0 0 1 1 1 0
15	0 0 0 0 1 1 1 1
16	0 0 0 1 0 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
33	0 0 0 1 0 0 0 1
34	0 0 0 1 0 0 0 0
35	0 0 0 1 0 0 1 1
36	0 0 0 1 0 0 0 0
37	0 0 0 1 0 0 1 0
38	0 0 0 1 0 0 1 1
39	0 0 0 1 0 0 1 1
40	0 0 0 1 0 1 0 0
41	0 0 0 1 0 1 0 1
42	0 0 0 1 0 1 0 0
43	0 0 0 1 0 1 0 1
44	0 0 0 1 0 1 1 0
45	0 0 0 1 0 1 1 0
46	0 0 0 1 0 1 1 0
47	0 0 0 1 0 1 1 1
48	0 0 0 1 1 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
65	0 1 0 0 0 0 1 1
66	0 1 0 0 0 0 1 0
67	0 1 0 0 0 0 1 1
68	0 1 0 0 0 1 0 0
69	0 1 0 0 0 1 0 1
70	0 1 0 0 0 1 1 0
71	0 1 0 0 0 1 1 1
72	0 1 0 0 1 0 0 0
73	0 1 0 0 1 0 0 1
74	0 1 0 0 1 0 1 0
75	0 1 0 0 1 0 1 1
76	0 1 0 0 1 1 0 0
77	0 1 0 0 1 1 0 1
78	0 1 0 0 1 1 1 0
79	0 1 0 0 1 1 1 1
80	0 1 0 1 0 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
97	0 1 1 0 0 0 1 1
98	0 1 1 0 0 0 1 0
99	0 1 1 0 0 0 1 1
100	0 1 1 0 0 1 0 0
101	0 1 1 0 0 1 0 1
102	0 1 1 0 0 1 1 0
103	0 1 1 0 0 1 1 1
104	0 1 1 0 1 0 0 0
105	0 1 1 0 1 0 0 1
106	0 1 1 0 1 0 1 0
107	0 1 1 0 1 0 1 1
108	0 1 1 0 1 1 0 0
109	0 1 1 0 1 1 0 1
110	0 1 1 0 1 1 1 0
111	0 1 1 0 1 1 1 1
112	0 1 1 1 0 0 0 0

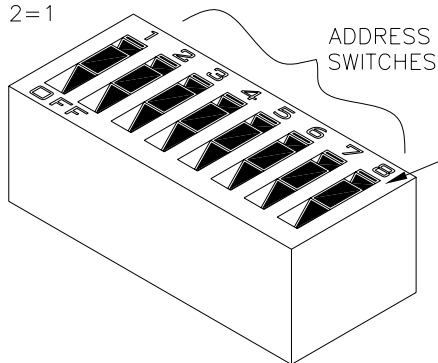
DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
17	0 0 0 1 0 0 0 1
18	0 0 0 1 0 0 1 0
19	0 0 0 1 0 0 1 1
20	0 0 0 1 0 1 0 0
21	0 0 0 1 0 1 0 1
22	0 0 0 1 0 1 1 0
23	0 0 0 1 0 1 1 1
24	0 0 0 1 1 0 0 0
25	0 0 0 1 1 0 0 1
26	0 0 0 1 1 0 1 0
27	0 0 0 1 1 0 1 1
28	0 0 0 1 1 1 0 0
29	0 0 0 1 1 1 0 1
30	0 0 0 1 1 1 1 0
31	0 0 0 1 1 1 1 1
32	0 0 1 0 0 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
49	0 0 1 1 0 0 0 1
50	0 0 1 1 0 0 1 0
51	0 0 1 1 0 0 1 1
52	0 0 1 1 0 1 0 0
53	0 0 1 1 0 1 0 1
54	0 0 1 1 0 1 1 0
55	0 0 1 1 0 1 1 1
56	0 0 1 1 1 0 0 0
57	0 0 1 1 1 0 0 1
58	0 0 1 1 1 0 1 0
59	0 0 1 1 1 0 1 1
60	0 0 1 1 1 1 0 0
61	0 0 1 1 1 1 0 1
62	0 0 1 1 1 1 1 0
63	0 0 1 1 1 1 1 1
64	0 1 0 0 0 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
81	0 1 0 1 0 0 0 1
82	0 1 0 1 0 0 1 0
83	0 1 0 1 0 0 1 1
84	0 1 0 1 0 1 0 0
85	0 1 0 1 0 1 0 1
86	0 1 0 1 0 1 1 0
87	0 1 0 1 0 1 1 1
88	0 1 0 1 1 0 0 0
89	0 1 0 1 1 0 0 1
90	0 1 0 1 1 0 1 0
91	0 1 0 1 1 0 1 1
92	0 1 0 1 1 1 0 0
93	0 1 0 1 1 1 0 1
94	0 1 0 1 1 1 1 0
95	0 1 0 1 1 1 1 1
96	0 1 1 0 0 0 0 0

DIP SWITCH ADDRESS SETTING	
DECIMAL ADDRESS	SW 8 SW 7 SW 6 SW 5 SW 4 SW 3 SW 2 SW 1
113	0 1 1 1 0 0 0 1
114	0 1 1 1 0 0 1 0
115	0 1 1 1 0 0 1 1
116	0 1 1 1 0 1 0 0
117	0 1 1 1 0 1 0 1
118	0 1 1 1 0 1 1 0
119	0 1 1 1 0 1 1 1
120	0 1 1 1 1 0 0 0
121	0 1 1 1 1 0 0 1
122	0 1 1 1 1 0 1 0
123	0 1 1 1 1 0 1 1
124	0 1 1 1 1 1 0 0
125	0 1 1 1 1 1 0 1
126	0 1 1 1 1 1 1 0
127	0 1 1 1 1 1 1 1
128	1 0 0 0 0 0 0 0

S1-ADDRESS DIP SWITCH
SCALE 2=1



NOTES:

0 = OFF, 1 = ON.

TO TURN SWITCH ON, PRESS DOWN ON THE TOP SIDE OF THE SWITCH ROCKING IT TO THE OTHER POSITION.

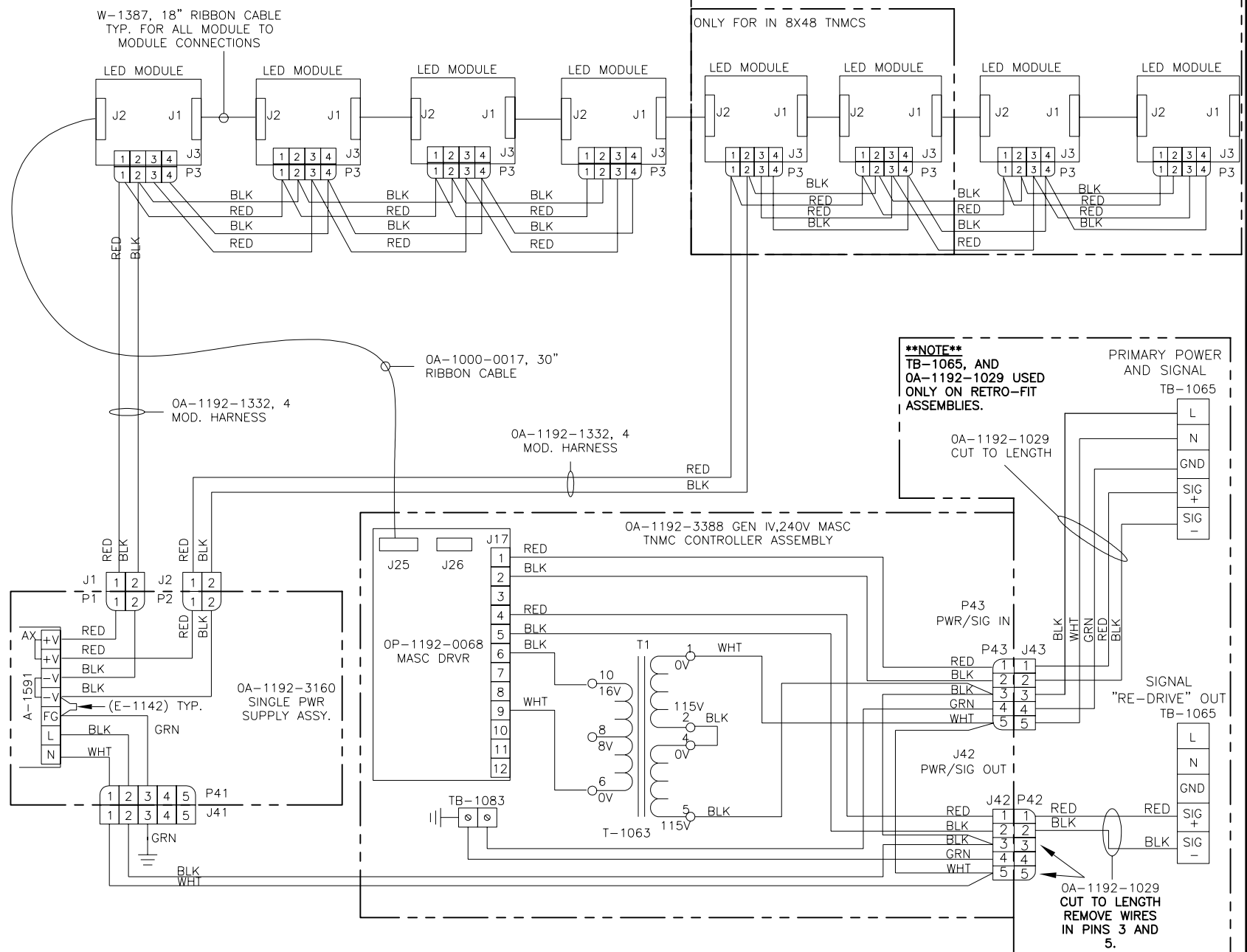
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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: ADDRESS TABLE 1; GEN IV DRIVER ADDRESS DIP SWITCH			
DES. BY: MMILLER		DRAWN BY: MMILLER	DATE: 16 NOV 06
REVISION	APPR. BY:	1192-R10A-290261	
00	SCALE: 1 = 1		

REV.	DATE	DESCRIPTION	BY	APPR.

REV.	01	ADDED TB-1083 GROUND TERMINAL TO DRAWING.
DATE	14 NOV 07	
DESCRIPTION	DAKTRONICS, INC. BROOKINGS, SD 57006	
BY	AMG	
APPR.		

REVISION	01	APPR. BY: DNING
SCALE:	NONE	DATE: 18 JAN 07
1192-R01A-294858		

- 0A-1192-3389 8X32 34MM RED TNMC G4
- 0A-1192-3391 8X48 34MM RED TNMC G4
- 0A-1192-3393 8X64 34MM RED TNMC G4
- 0A-1407-XXXX 8X32 34MM DROP IN TNMC G4
- 0A-1407-0104 8X48 34MM DROP IN TNMC G4
- 0A-1407-XXXX 8X64 34MM DROP IN TNMC G4



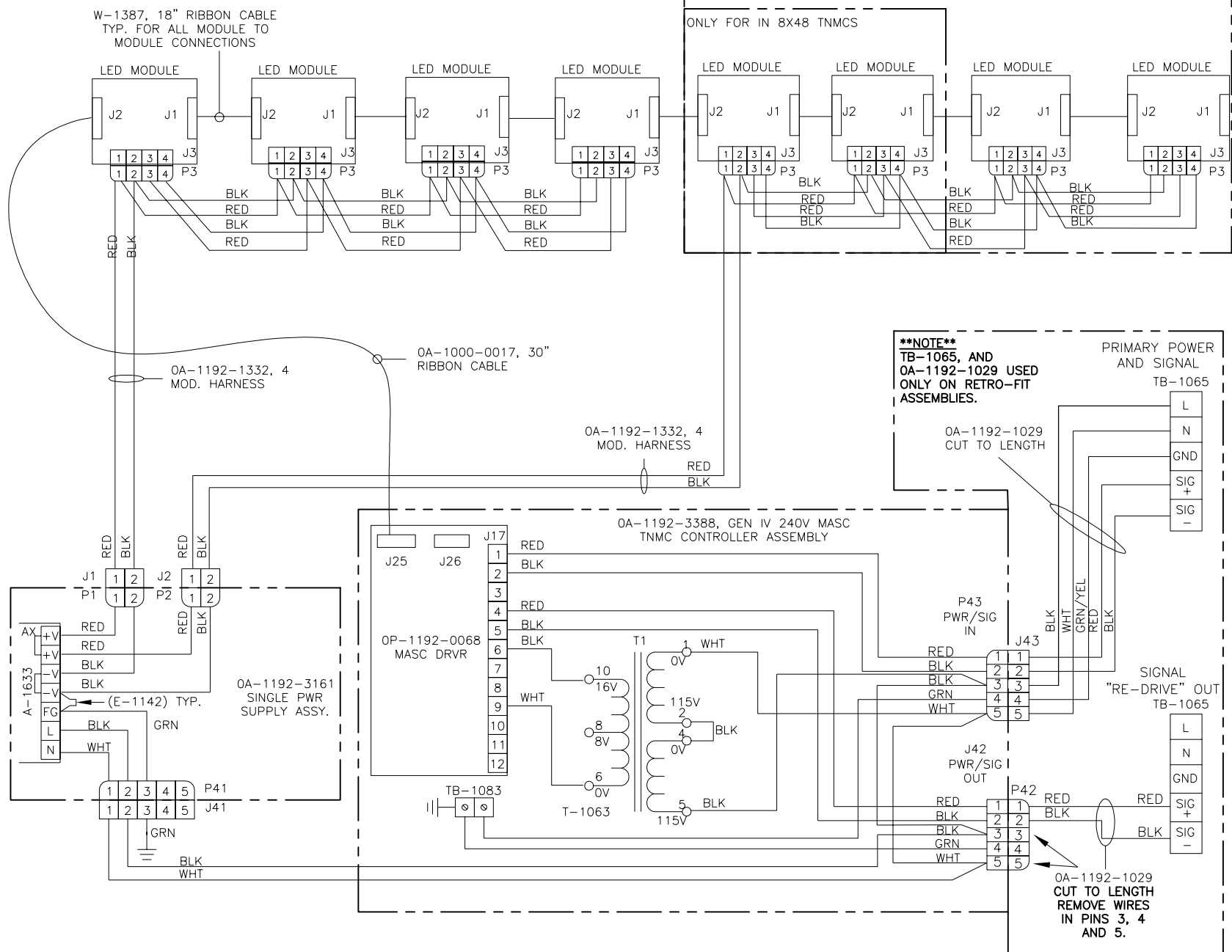
REV.	01	10 APR 07	ADDED TB-1083 GND TERMINAL BLOCK AND GROUND WIRES
DATE	02	14 NOV 07	EDITED PART NUMBERS FOR 34MM DROP-IN'S.
DESCRIPTION	BY	APPR.	
	DMD	AMG	

PROJ.	OUTDOOR LED SCOREBOARDS
TITLE	SCHEMATIC: 832 / 848 / 864 AMBER GEN IV, 240V
DES. BY	DDINING
DATE	18 JAN 07
REVISION	02
APPR. BY	NONE
SCALE	NONE
1192-R03A-294919	

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DAKTRONICS, INC. BROOKINGS, SD 57006

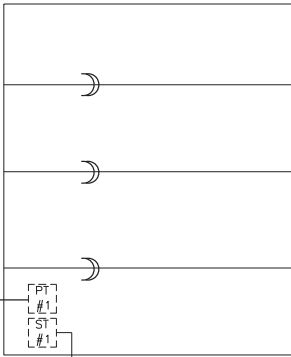
- 0A-1192-3390 8X32 34MM AMBER TNMC G4
- 0A-1192-3392 8X48 34MM AMBER TNMC G4
- 0A-1192-3394 8X64 34MM AMBER TNMC G4
- 0A-1407-XXXX 8X32 34MM DROP IN TNMC G4
- 0A-1407-0105 8X48 34MM DROP IN TNMC G4
- 0A-1407-XXXX 8X64 34MM DROP IN TNMC G4



OPTIONAL FIXED DIGIT SCOREBOARD SETUP

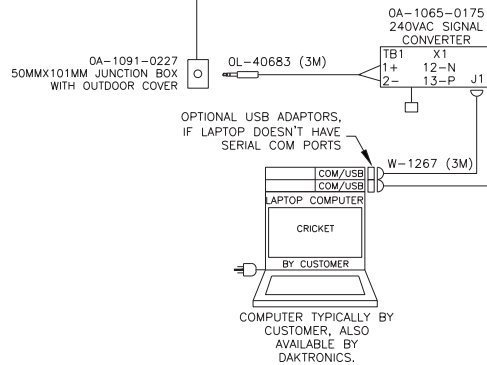
REAR VIEW

FIXED DIGIT CRICKET SCOREBOARD
CR-2004 MULTI-SECTION MODEL
SHOWN



TOTAL POWER REQUIRED SEE MODEL PURCHASED:

VOLTAGE-PRIMARY	
240VAC	2 WIRES + GND
# OF POLES	SINGLE
AMPERES PER LINE	TBD
MAXIMUM WATTS	TBD



NOTES:

THIS IS NOT A SCALED DRAWING AND SHOULD BE USED FOR POWER AND SIGNAL REQUIREMENTS ONLY. MODEL CR-2004 SHOWN, SIMILAR MODELS CAN FOLLOW THIS LAYOUT.

ALL SIGNAL CABLE RUNS SHOULD BE LABELED WITH THEIR ORIGIN AND DESTINATION ON EACH END.

IF FIBER OPTIC CABLE REQUIRED, RUNS MUST BE CONTINUOUS WITH A MINIMUM 7" BEND RADIUS.

IF A SHIELDED SIGNAL CABLE IS UTILIZED IN YOUR SYSTEM, ENSURE THAT THE SHIELD IS GROUNDED ON THE DISPLAY END ONLY, AND TO THE SHIELD TERMINAL AT THE SIGNAL CABLE SURGE ARRESTED CARD WHEN AVAILABLE.

ALL DISPLAYS MUST BE PROPERLY GROUNDED PER THE NATIONAL AND LOCAL ELECTRICAL CODE WITH NO MORE THAN 10 OHMS GROUND RESISTANCE.

INTERNAL POWER AND SIGNAL INTERCONNECTION CABLES WITH DISPLAY.

- ① POWER CIRCUIT BY OTHERS. DEDICATED CONDUIT KNOCK OUTS AVAILABLE ON BACK OF DISPLAY. REFER TO INSTALLATION MANUAL FOR ALL DETAILS.
- ② POWER CIRCUIT BY OTHERS. REFER TO STANDARD INSTALLATION DRAWINGS AND INSTALLATION MANUAL FOR ALL DETAILS.
- Ⓐ TYPICAL W-1234, 2 PAIR, 22AWG STRANDED /W SHIELD IN DEDICATED CONDUIT. MAX. LENGTH IS 200FT. CABLE AVAILABLE FROM DAKTRONICS. CONDUIT, LABOR TO INSTALL, AND TERMINATION BY OTHERS.

FIBER OPTION ALSO AVAILABLE.

PT#1 - INTERNAL POWER TERM. PANEL BY DAKTRONICS. REFER TO INSTALLATION MANUAL FOR TERMINATION.

ST#1 - INTERNAL SIGNAL TERMINATION PANEL BY DAKTRONICS. REFER TO INSTALLATION MANUAL FOR TERMINATION.

OPTIONAL MATRIX SETUP

REAR VIEW

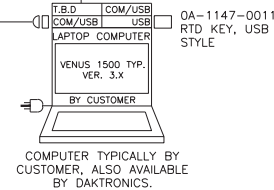
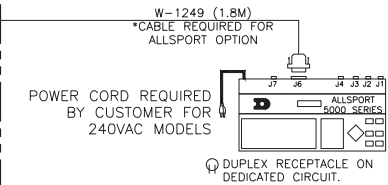
MATRIX DISPLAY.
**TECHNOLOGY AND SIZE
VARIES. USE STANDARD
DRAWINGS FOR INSTALLATION
AND TERMINATION

TOTAL POWER REQUIRED SEE MODEL PURCHASED:

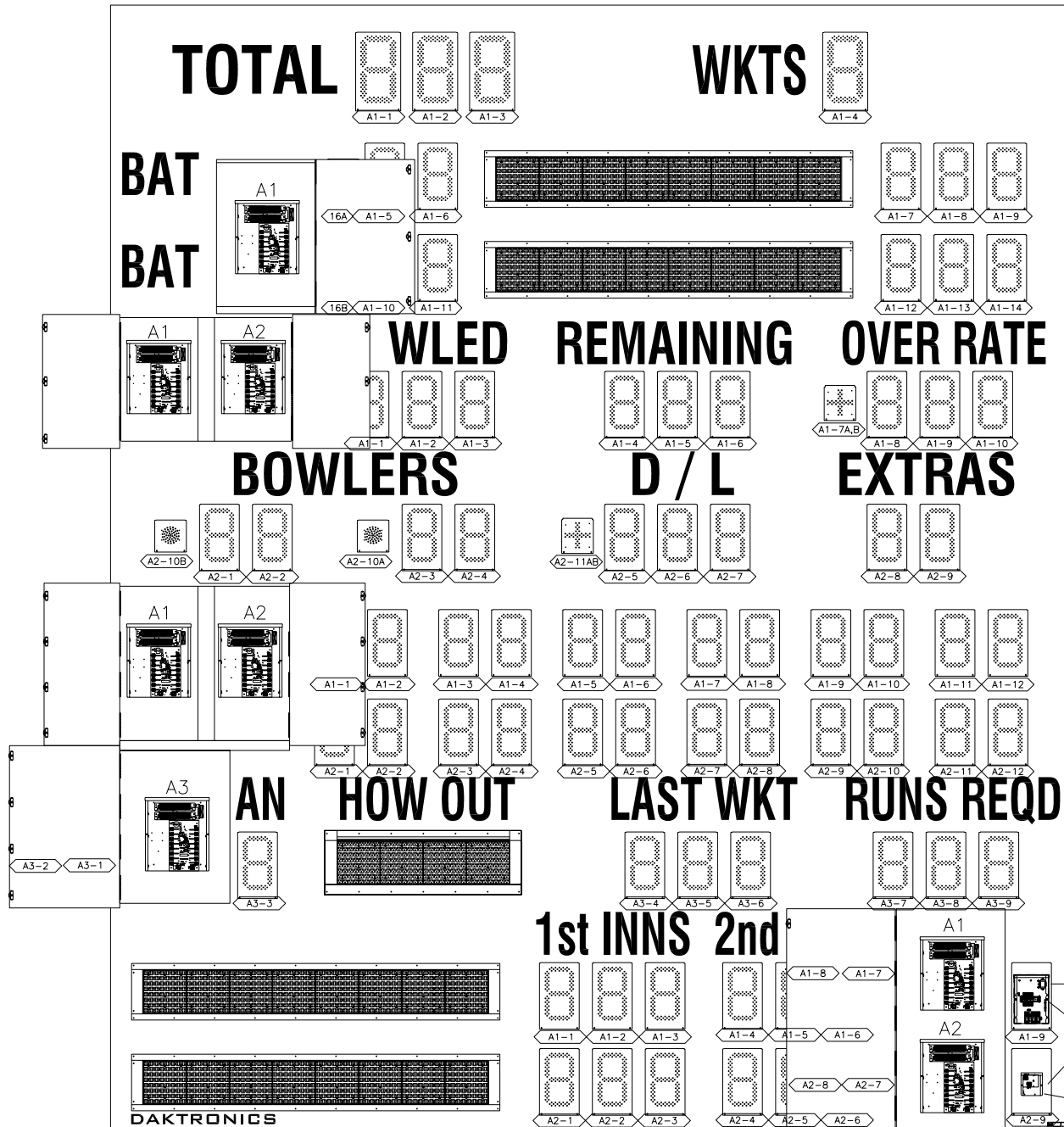
VOLTAGE-PRIMARY	
240VAC	? WIRES + GND
# OF POLES	TBD
AMPERES PER LINE	TBD
MAXIMUM WATTS	TBD

SIGNAL OPTIONS
AVAILABLE. SEE THE
SALE AND STANDARD
COMMUNICATION DRAWINGS
FOR DETAILS

ALLSPORT OPTION FOR
ADDITIONAL SPORTS ON A
MATRIX DISPLAY.



REV 01	DATE 24 NOV 10	ADDED DETAILS TO SHOW CRICKET SOFTWARE SYSTEM TO A MATRIX DISPLAY	BY: MWM
		DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING	
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PROJ: CLUB INFORMATIVE CRICKET TITLE: SYSTEM RISER: COMPUTER CONTROLLED CRICKET			
DESIGN: MMILLER	DRAWN: MMILLER	DATE: 27 NOV 07	
SCALE: NONE			
SHEET	REV	JOB NO:	FLUNC-TYPE-SIZE
	01	P1344	R-01-B
			326325



CR-2005 SECTION

CR-2006 SECTION

CR-2007 SECTION

CR-2008 SECTION

POWER
REMOVE DIGIT FOR ACCESS
SIGNAL

HINGED ACCESS DOORS SHOWN OPEN TO ILLUSTRATE LED DRIVER ACCESS. NOTE: POWER PANEL AND SIGNAL ENCLOSURE ARE BEHIND DIGITS.

<A1-6> = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO.

NOTE: ALL DIGITS ARE 15" IN SIZE EXCEPT "TOTAL" AND "WKTS". THOSE ARE 18" IN SIZE.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: CLUB INFORMATIVE CRICKET			
TITLE: COMPONENT LOCATION; CR-2004-11, -21, -12, -22			
DES. BY: TWEBER		DRAWN BY: MMILLER	DATE: 07 DEC 07
REVISION	APPR. BY: TW	1344-R01A-327249	
00	SCALE: 1=40		

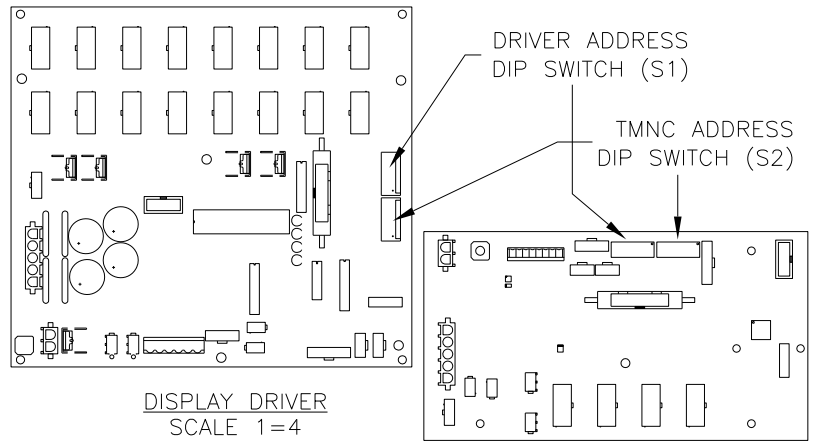
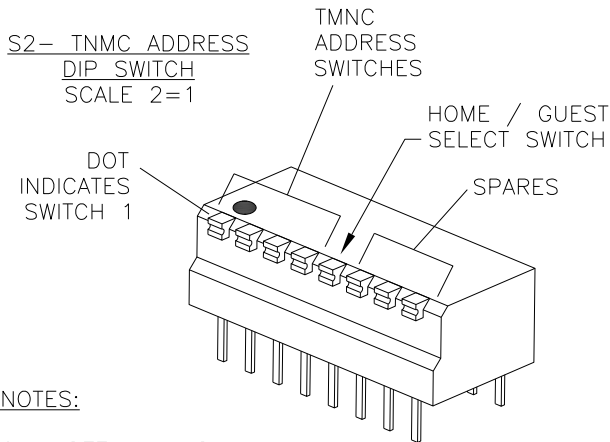
REV.	DATE	DESCRIPTION	BY	APPR.
------	------	-------------	----	-------

PROTOCOL ADDRESS	SWITCH SETTING	SWITCH 4	SWITCH 3	SWITCH 2	SWITCH 1
221	0	0	0	0	0
222	1	0	0	0	1
223	2	0	0	1	0
224	3	0	0	1	1
225	4	0	1	0	0
226	5	0	1	0	1
227	6	0	1	1	0
228	7	0	1	1	1
229	8	1	0	0	0
230	9	1	0	0	1
231	10	1	0	1	0
232	11	1	0	1	1
233	12	1	1	0	0
234	13	1	1	0	1
235	14	1	1	1	0
236	15	1	1	1	1

HOME / GUEST SELECT SWITCH FUNCTION TABLE

OFF	HOME / GUEST DATA SENT TO TNMC'S
ON	GUEST / HOME DATA SENT TO TNMC'S

SPARE 1	RESERVED FOR FUTURE USE
SPARE 2	RESERVED FOR FUTURE USE
SPARE 3	RESERVED FOR FUTURE USE



NOTES:

0 = OFF, 1 = ON

REFER TO THE FOLLOWING DRAWINGS FOR ADDITIONAL ADDRESS AND SWITCH SETTINGS: ADDRESS SWITCH A-328273

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DAKTRONICS, INC. BROOKINGS, SD 57006

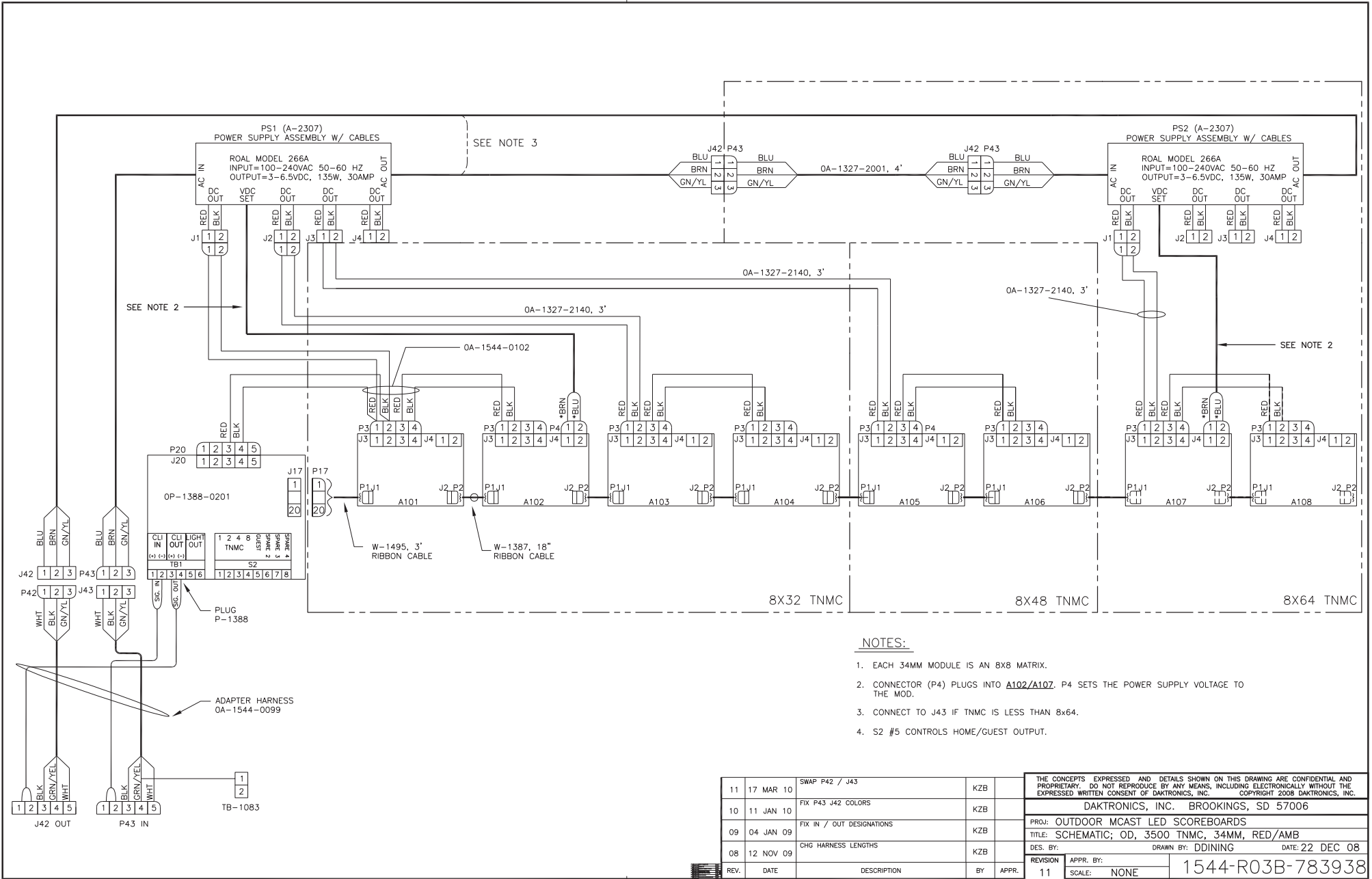
PROJ: _____

TITLE: ADDRESS TABLE: DRIVER- MCAST G2- TNMC SWITCH

DES. BY: _____ DRAWN BY: DULSCHM DATE: 18 DEC 07

REVISION	APPR. BY:	1388-R10A-328274
02	SCALE: NONE	

REV.	DATE	DESCRIPTION	BY	APPR.
02	21 SEP 09	ADDED 4 COL DRIVER DETAIL	DJU	
01	27 MAY 08	UPDATED CHARTS AND CORRECTED SWITCH DRAWING LAYOUT	DKD	



SEE NOTE 2

SEE NOTE 3

SEE NOTE 2

NOTES:

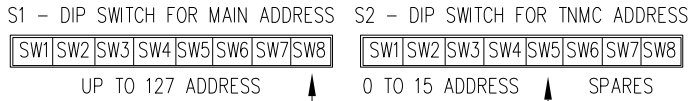
1. EACH 34MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO A102/A107. P4 SETS THE POWER SUPPLY VOLTAGE TO THE MOD.
3. CONNECT TO J43 IF TNMC IS LESS THAN 8x64.
4. S2 #5 CONTROLS HOME/GUEST OUTPUT.

REV.	DATE	DESCRIPTION	BY	APPR.
11	17 MAR 10	SWAP P42 / J43	KZB	
10	11 JAN 10	FIX P43 J42 COLORS	KZB	
09	04 JAN 09	FIX IN / OUT DESIGNATIONS	KZB	
08	12 NOV 09	CHG HARNESS LENGTHS	KZB	

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR MCAST LED SCOREBOARDS	DES. BY: DDINING
TITLE: SCHEMATIC; OD, 3500 TNMC, 34MM, RED/AMB	DATE: 22 DEC 08
REVISION 11	APPR. BY: SCALE: NONE

1544-R03B-783938

DRIVER_MCAST_4_COL
OP-1388-0201



SW8 - T.O.D. ON ENABLED
SW5 - HOME OR GUEST SELECT
OFF = HOME
ON = GUEST

J24 LIGHT SENSOR

PIN	FUNCTION
1	LIGHT_IN-P
2	LIGHT_IN-N
3	+5V-P
4	GND-N
5	GND-N
6	232_IN-P

TB1 SIGNAL

PIN	FUNCTION
1	SIG-P
2	SIG-N
3	CLOUT-P
4	CLOUT-N
5	LIGHT_0-P
6	LIGHT_0-N
7	232_IN-P
8	GND-N

J30 RADIO (MAIN)

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	INPUT-P

J31 RADIO (AUX)

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	INPUT-P

J29 SW INPUTS

PIN	FUNCTION
1	SW_IN0-P
2	GND-N
3	SW_IN1-P
4	GND-N
5	SW_IN2-P
6	GND-N
7	SW_IN3-P
8	GND-N

J19 PROGRAM JACK

PIN	FUNCTION
1	PGC
2	/MCLR
3	N/C
4	GND-N
5	PGD
6	GND-N
7	PGM
8	+5V-P
9	N/C
10	N/C

J25 (AUX 5)

PIN	FUNCTION
1	120VAC SW P
2	120VAC SW N

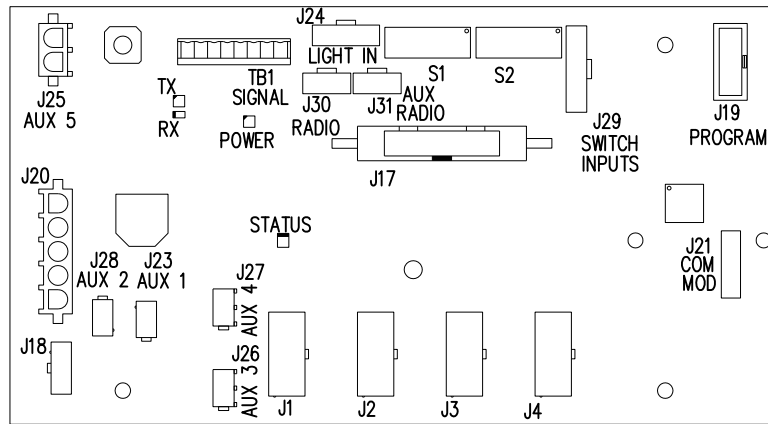
120VAC SWITCHED
AUX OUT
(1.25A MAX)

J20 POWER IN

PIN	FUNCTION
5	+VDD-P
4	GND-N
3	XFMR-CT
2	GND-N
1	+VBB-P

J18 PWR OUT

PIN	FUNCTION
1	20VDC
2	10VDC
3	GND-N



J21 COM MOD HEADER

FUNCTION	PIN	PIN	FUNCTION
N/C	A	1	N/C
N/C	B	2	MOD_TX
N/C	C	3	MOD_RX
GND-N	D	4	GND-N
GND-N	E	5	GND-N
+5V	F	6	N/C
N/C	H	7	+5V

J23,28 (AUX 1 - 2)

PIN	FUNCTION
1	SWITCHED AC V
2	GND-N

SECONDARY VOLTAGE
SWITCHED GND
200ma MAX

J26-27 (AUX 3 - 4)

PIN	FUNCTION
1	SWITCHED DC V
2	GND-N

AUX 3&4 MAX OUTPUT
INDOOR=2A
OUTDOOR 1.5A

J1-4 DIGITS

PIN	FUNCTION
1	SEGA-N
2	SEGB-N
3	SEGC-N
4	SEGD-N
5	SEGE-N
6	SEGF-N
7	SEGG-N
8	SEGH-N
9	+V1
10	+V2

200mA MAX / SEGMENT
12.8A MAX LOAD FOR
EVEN OR ODD COLUMNS

J17 TEAM NAME OUTPUT

FUNCTION	PIN	PIN	FUNCTION
GND4-P	11	10	ID3
RED4-P	12	9	ID2
GND3-P	13	8	GND-N
MTRX_CLK	14	7	GND-N
RED3-P	15	6	GRN2-P
RED2-P	16	5	GND-N
MTRX_DIM	17	4	GND-N
MTRX_LT	18	3	GND-N
GND1-P	19	2	ID1
RED1-P	20	1	ID0

NOTES:

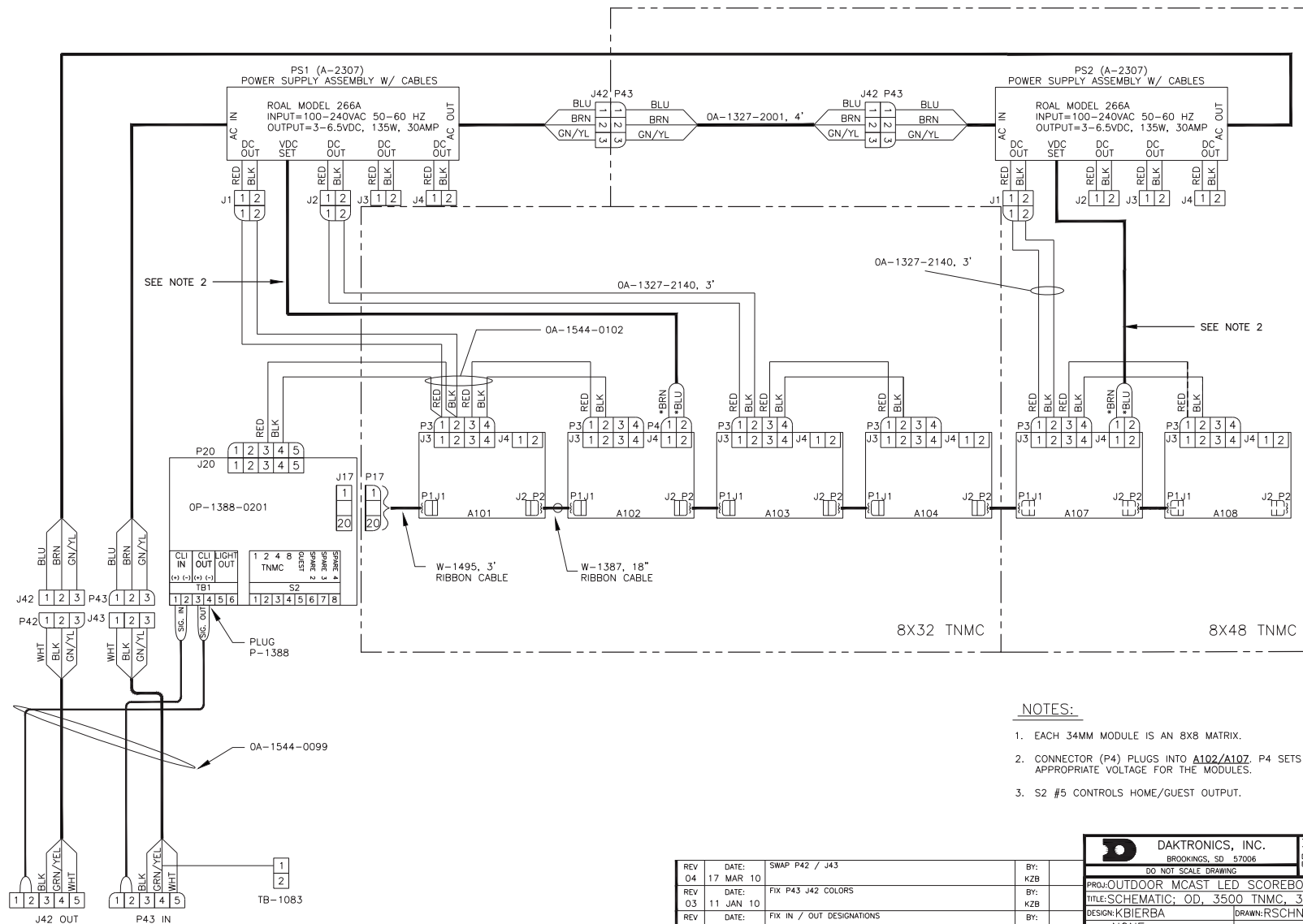
- GREEN POWER LED INDICATES THAT THE DRIVER HAS POWER.
- RED RX LED IS ON WHEN INPUT SIGNAL IS CONNECTED BUT IDLE AND BLINKS WHEN DATA IS RECEIVED. IF RED RX LED IS OFF, THERE IS NO CONNECTION.
- TX LED IS ON WHEN SIGNAL IS DISCONNECTED AND OFF WHEN INPUT IS IDLE. THE TX LED BLINKS WHEN DATA IS TRANSMITTED.
- AMBER STATUS LED WILL BLINK WHEN THE DRIVER IS RUNNING.
- IF STATUS LED IS ON OR OFF CONTINUOUSLY THE MICROCONTROLLER IS NOT WORKING.
- REFER TO THE FOLLOWING DRAWINGS FOR ADDRESS AND SWITCH SETTINGS:

ADDRESS SWITCH (S1) A-328273

TNMC ADD SWITCH (S2) A-328274

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2009 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: SPECIFICATIONS; DRIVER, MCAST, 4 COL			
DES. BY: KKASKI		DRAWN BY: DULSCHM	
DATE: 23 JAN 09			
REVISION	APPR. BY:	1388-E07A-793970	
01	SCALE: 1 = 2		

REV.	DATE	DESCRIPTION	BY	APPR.
01	21 SEP 09	UPDATED SWITCH DRAWING NUMBERS	DJU	



SEE NOTE 2

SEE NOTE 2

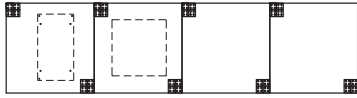
NOTES:

1. EACH 34MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO A102/A107. P4 SETS THE POWER SUPPLY TO THE APPROPRIATE VOLTAGE FOR THE MODULES.
3. S2 #5 CONTROLS HOME/GUEST OUTPUT.

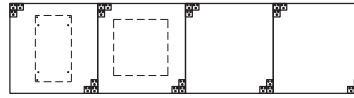
REV 04	DATE: 17 MAR 10	SWAP P42 / J43	BY: KZB
REV 03	DATE: 11 JAN 10	FIX P43 J42 COLORS	BY: KZB
REV 02	DATE: 04 JAN 09	FIX IN / OUT DESIGNATIONS	BY: KZB
REV 01	DATE: 29 OCT 09	ADDED NOTE #3, P-1388	BY: KZB

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 2010 DAKTRONICS, INC.
PROJ: OUTDOOR MCAST LED SCOREBOARDS TITLE: SCHEMATIC; OD, 3500 TNMC, 34MM, WHT DESIGN: KBIERBA DRAWN: RSCHNEI DATE: 19 AUG 09		
SCALE: NONE		
SHEET	REV 05	JOB NO. P1544
		FLUNC-TYPE-SIZE R-03-B
906385		

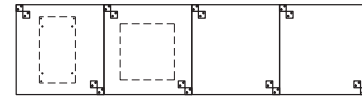
8x32- 34MM AMBER LED TNMC



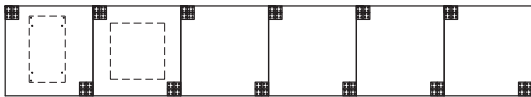
8x32- 34MM RED LED TNMC



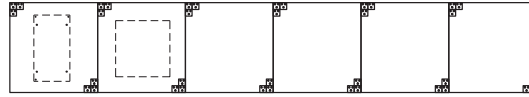
8x32- 34MM WHITE LED TNMC



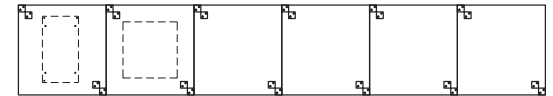
8x48- 34MM AMBER LED TNMC



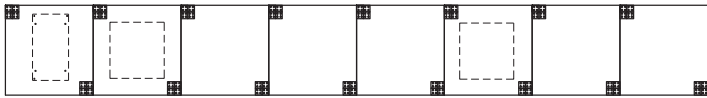
8x48- 34MM RED LED TNMC



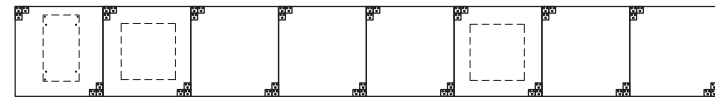
8x48- 34MM WHITE LED TNMC



8x64- 34MM AMBER LED TNMC



8x64- 34MM RED LED TNMC



AMBER LED TNMC MODULE



RED LED TNMC MODULE




WHITE LED TNMC MODULE



DRIVER



POWER SUPPLY

 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 2010 DAKTRONICS, INC.				
		PROJ: OUTDOOR LED SCOREBOARDS TITLE: COMPONENT LOC.: 34MM RED/AMB/WHT LED TNMC G4 DESIGN: KDRAGT DRAWN: KOLSON DATE: 18 FEB 10				
SCALE: 1=15		SHEET	REV 01	JOB NO. P1544	FLUNC-TYPE-SIZE R-08-B	975100

REV	DATE:	MADE DRAWING GENERIC	BY:
01	04 NOV 10		SAG

Appendix B: Supplemental Manuals

Quick Guide: Total Cricket Scorer (DD1420310)

This guide explains how to set up the Total Cricket Scorer (TCS) software to output information to Daktronics scoreboards and displays.

Activating a Scoreboard

In order to allow TCS to control your scoreboard/display, you must first enter the appropriate registration keys.

1. Go to **Help > Activate Scoreboard**.
2. On the *Activate Scoreboard* window (Figure 1), type in the *Register Key* and *Serial Number*.

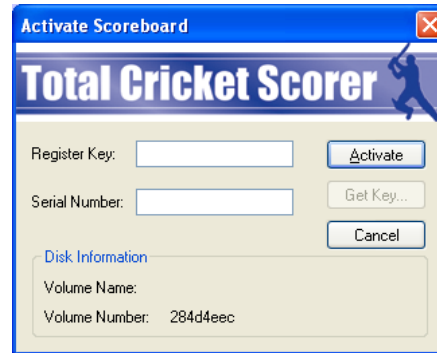


Figure 1

Note: This information can be requested via e-mail or over the internet. Be sure to provide the *Volume Number* when making a request.

3. Click **Activate**.

Configuring a Scoreboard

1. Go to **Tools > Options**.
2. Click the **Scoreboard** tab (Figure 2).

Note: The top *Communications* port is for the Multi-Drop Protocol (MDP) to a fixed digit display, and the bottom *Communications Port 2* is used for Enhanced Real Time Data (ERTD) to matrix display controllers.

3. Under *Manufacturer*, choose from:

- **DakMDP + Venus:** the full Venus stream of data; uses "Code 27 Cricket Scoreboard.itf"
- **DakMDP + MiniFeed:** a smaller stream of data that can be used when Team Name Message Centers (TNMCs) in a fixed digit board are matrix displays instead of TNMCs; uses "Code 27 Cricket Scoreboard (Limited).itf"

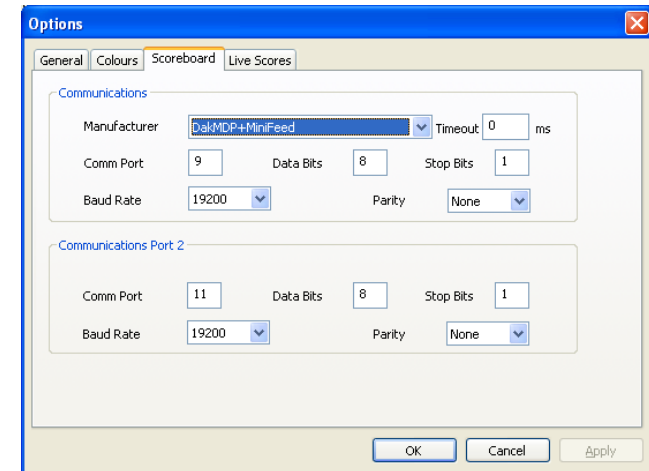


Figure 2

4. Type in the correct *Comm Port* setting for the communications ports as needed.
5. Click **Apply** and then **OK** when finished.

Controlling a Scoreboard

After activating and configuring the scoreboard, four new buttons will become active on the main toolbar (*Figure 3*).

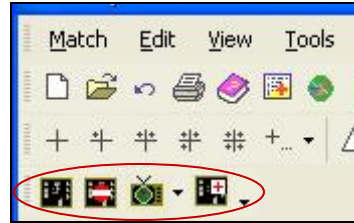


Figure 3

- Click the first button to refresh all of the data going to the external scoreboard.
- Click the second button to pause scoreboard updates.
- Click the third button to select a graphic for the scoreboard if applicable.
- Click the fourth button for scoreboard brightness and diagnostics (*Figure 4*).

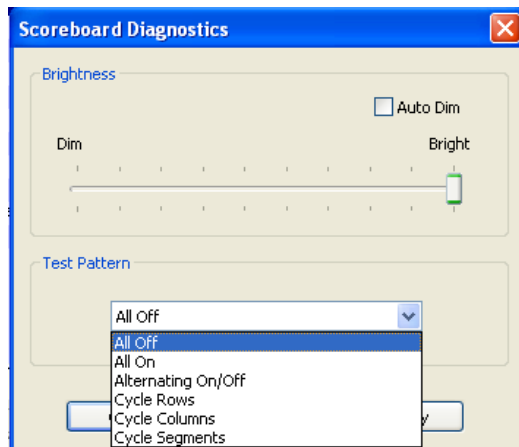


Figure 4

- Use the slider to adjust the *Brightness* of the scoreboard, or select **Auto Dim**.
- Select a *Test Pattern* to test the scoreboard connection/performance.
- Click **Apply** and then **OK** when finished.

Appendix C: Daktronics Warranty and Limitation of Liability

DAKTRONICS WARRANTY AND 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 agrees to be bound by and accept these terms and conditions. All defined 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 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 Purchaser 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. 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 either Purchaser or Daktronics.

C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. If returned Equipment is repaired or replaced under the terms of this warranty, Daktronics will prepay ground transportation charges back to Purchaser; otherwise, Purchaser shall pay transportation charges to return the Equipment back to the Purchaser. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. Purchaser 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 this 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. The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Nor does the limited warranty 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.

THIS LIMITED WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SPECIFICALLY, EXCEPT AS PROVIDED HEREIN, THE SELLER UNDERTAKES NO RESPONSIBILITY FOR THE QUALITY OF THE EQUIPMENT OR THAT THE EQUIPMENT WILL BE FIT FOR ANY PARTICULAR PURPOSE FOR WHICH PURCHASER MAY BE BUYING THE EQUIPMENT. ANY IMPLIED WARRANTY IS LIMITED IN DURATION TO THE WARRANTY PERIOD. NO ORAL OR WRITTEN INFORMATION, OR ADVICE GIVEN BY THE COMPANY, ITS AGENTS OR EMPLOYEES, SHALL 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**

The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for:

A. Any 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, Purchaser assumes all risk of loss or damage, and agrees to use any shipping containers that might be provided by Daktronics and to ship the Equipment in the manner prescribed by Daktronics;

B. Any damage caused by the unauthorized adjustment, repair or service of the Equipment by anyone other than 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) a failure or sudden surge of electrical power, (iii) improper air conditioning or humidity control, 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. Any statements made about the product by salesmen, dealers, distributors or agents, 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 Purchaser and are not part of the contract of sale;

G. Any 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; or

H. Any performance of preventive maintenance.

3. **Limitation of Liability**

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.

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 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, lost data, injury to property or any damages or sums paid by Purchaser 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.

In no event shall Daktronics be liable to Purchaser or any other party 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 actually delivered to and paid for by the Purchaser. The Purchaser'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**

The Warranty contained herein extends only to the original 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. **Dispute Resolution**

Any dispute between the parties will be resolved exclusively and finally by arbitration administered by the American Arbitration Association ("AAA") and conducted under its rules, except as otherwise provided below. The arbitration will be conducted before a single arbitrator. The arbitration shall be held in Brookings, South Dakota. Any decision rendered in such arbitration proceedings will be final and binding on each of the parties, and judgment may be entered thereon in any court of competent jurisdiction. This arbitration agreement is made pursuant to a transaction involving interstate commerce, and shall be governed by the Federal Arbitration Act.

6. **Governing Law**

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. Both parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce all of Purchaser and Daktronics 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.

7. **Availability of Extended Service Agreement**

For Purchaser's protection, in addition to that afforded by the warranties set forth herein, Purchaser 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 1-877-605-1116.