1000 Series
Digital Billboard with V-Net^{TM}

Installation Manual

ED-17025   *Rev 02 – 10 August, 2017*

DAKTRONICS

DAKTRONICS, INC.

Table of Contents

Section 1:   Introduction

This manual guides project managers and Authorized Service Contractors (ASC) in the installation of 2007 series digital billboard displays, and display components.

1.1   Using the Manual

Important Safeguards:

- Read and understand installation instructions before beginning the installation process.

- Disconnect display power when servicing the display or display components. Power supplies run on high voltage and may cause physical injury if touched.

This manual is divided into eight sections:

1. **Introduction:** explains the basic information needed to use this manual. Take time to read the entire introduction as it explains concepts used throughout this manual.

2. **Display Installation:** covers required tools, site preparation, display assembly, and display hanging.

3. **Remote Enclosure:** explains the installation, wiring, and troubleshooting of the remote enclosure.

4. **Air Conditioning (a/c) Installation:** highlights the installation and testing of an a/c unit.

5. **Electrical Installation:** covers basic steps for hanging and wiring distribution panels and a junction box. This section also provides guidelines on running SO cable, and running and connecting fiber-optic cable.

6. **Webcam, Spare Parts Box, and Photocell:** covers the installation and mounting of the webcam arm, as well as the proper orientation and test procedures for a webcam. It also includes specifications for the proper orientation for the spare parts box and photocell.

7. **First-time Power Up:** covers display startup procedure as well as display troubleshooting. It also covers test patterns, diagnostics, and calibration.

8. **Safety:** covers basic safety procedures when working on, or near, digital billboard displays. It also covers safety regulations on hardhats, safety glasses, and fall protection.

At the end of this manual are a glossary and two appendices: **Appendix A: Drawings** and **Appendix B: Supplementary Manuals**. The **Glossary** defines terms used in this manual. **Appendix A** contains drawings that are not project-specific and **Appendix B** contains manuals that contain useful information.

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 A-69945**.

DAKTRONICS, INC. BROOKINGS, SD 57006
PROJ: BASKETBALL
TITLE: SEGMENTATION, 7 SEG BAR DIGIT
DES. BY: BPETERSON   DRAWN BY: TNELSON   DATE: 8 JUL 01
APPR. BY: AVB
SCALE: 1 = 4
7087-P08A-69945

Figure *1*: *Daktronics Drawing Label*

It is important to not the drawing title since this manual may refer to drawings in an appendix by title rather than drawing number. All references to drawing numbers, appendices, figures, or other manuals are presented in bold typeface, as shown above.

1.2   Supplementary Manuals

The following table lists the supplementary manuals included in **Appendix B**.

Manual Title	Manual Number
Quick Guide: Billboard Electrical	**ED-15904**
Quick Guide: Billboard Signal Communications	**ED-16453**
Quick Guide: Billboard Spreader Beam Specifications	**ED-16454**
Quick Guide: Billboard Clip Mounting Detail	**ED-16455**
Quick Guide: Billboard Section Splice and Pixel Alignment	**ED-16456**
Quick Guide: Billboard Air Conditioner Installation	**ED-16516**
Quick Guide; Billboard Remote Enclosure	**ED-16517**
Setup Manual: Billboard iBoot	**ED-17024**
Quick Guide: Billboard Video Displays	**ED-17059**

Section 2:   Display Installation

2.1   Before Starting

1. Introduce yourself to the crew, crane operators, and other personnel working on the display.

2. Review **Section 5** and the **System Riser** in **Appendix A** with the electrician.

3. Review installation plans with the installer.

2.2   Required Tools

The following bullets list the minimum tool requirements Daktronics recommends having on-site for each installation.

- 6', 8', or 10' ladders (step or A-frame)
- Socket set, $1/2$" drive ($3/4$" socket head)
- Spud wrenches
- Impact wrenches
- Screw drivers—Phillips and flat head
- Utility knife
- Tape measure
- Cordless drill
- Drill bits
- Pry bar
- Hammers
- Tin snips
- Ratchet tie-downs/come along
- Bucket truck
- Spreader beam: 42' or 36'
- Caulk gun
- Caulk

2.3   Site Preparation

Upon arriving on-site, inspect the work area for potential hazards and problems.

1. Once the truck arrives, remove the tarp and wood crating material from the trailer.

2. Ensure the following parts were sent with the display. If missing parts on this list call the Project Manager (PM) or the Project Materials Manager (PMM) immediately and ensure the parts are on the way.

- a/c units (if applicable)
- Hardware for a/c units (if applicable)
- Remote enclosure

- Webcam
- Photo sensor
- Top and bottom borders
- Spare parts box
- Hardware for section splice (if applicable)
- Hardware for attaching the display to the structure.

3. Remove bracing between display sections.

2.4   Display Installation

1. Remove the top bracing between the sections.

2. Locate and open the crates with the borders inside.

3. The top borders have large holes on the top and drip lips along both sides. Lay the borders on the ground in order from left to right. For additional information on borders refer to **Drawing B-265098** in **Appendix A.**

    Note: Top borders are labeled. Labels end with an "A" and indicate order from left to right when facing the front of the display. Refer to **Figure 2**.
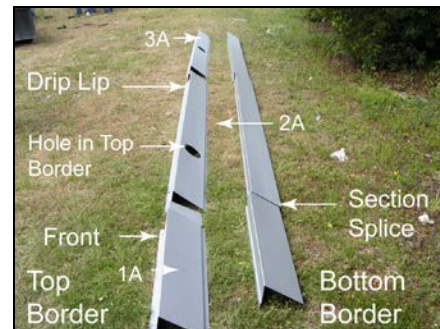
Figure 2: Top and Bottom Borders

4. Locate the end caps. Apply a bead of silicone along the lip with the bolt holes on the end cap. Fasten one end cap to each piece.

5. Attach a splice plate on one end of each border piece.

    Note: To protect against water, apply silicone to the top of the splice plates along the bolt holes on each side before fastening to the top border.

6. After removing the shipping braces, lay the top border on the top section and fasten the border with Tek screws. Refer to **Figure 3**.

    Note: Fasten the border starting on the side of the display closest to traffic.

Figure 3: Fastening Top Border

7. Apply silicone and screw all border pieces together.

8. Hook the spreader beam into the eyebolts on top of the display. Refer to **ED-16454** in **Appendix B** for spreader beam specifications.

9. Lift the display enough to apply tension on the top section.

10. Unbolt the top half of the display from the shipping braces.

   Note: Some displays do not require section splice on-site. If a section splice is not required, skip to **Step 20**. If a splice is required,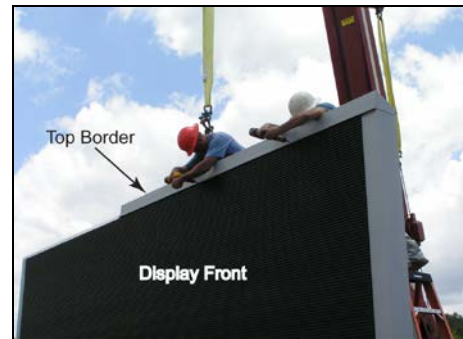 leave the end shipping braces bolted to the truck to stabilize the lower section. A section splice should be performed by Daktronics technicians or ASCs.

11. Remove every other module along the bottom edge of the top section where the bolt holes are located.

   Note: If a vertical splice is included, remove additional modules as needed. Stack the modules carefully to prevent LED damages. The best way to stack modules is face to face.

12. Insert and hand tighten guide pins into the screw holes located in each end and the middle of the display.

13. Apply a continuous bead of silicone about $1^1/_2''$ from the edge on the top of the bottom section. Also apply silicone around all bolt holes.

   Note: apply the silicone in a flat, continuous bead to ensure proper sealing.

14. Lift the display top section and lower in onto the bottom section. While lowering the top section onto the bottom section, use guide pins and spud wrenches to align display sections.

15. Once the display is aligned, apply a bead of silicone along the threads of a bolt. Insert the bolt into a hole in one end of the display and tighten.

   Note: Alignment of LEDs between the sections must be perfect before tightening. Refer to **ED-16456** in **Appendix B** for more information on LED alignment.

16. At the next open module, insert a spud wrench into a bolt hole and align the front edge of the sections. Insert a bolt with silicone applies and lightly tighten. Repeat this step for the length of the display.

17. Insert the rear bolts and tighten. Ensure all bolts are tight before continuing.

18. After bolting the sections together, replace the modules that were removed from the display.

19. Run and connect the Cat-5 cable between the sections.

20. Locate the box with the bottom border and lay the pieces out on the ground.

21. Place and fasten the end caps.

   Note: Do not use silicone on the bottom border.

22. Remove one L-bracket from the back of each end of the display. Screw in an eye bolt and attach tag lines to the eye bolts.

23. Lift the display off the truck.

24. Beginning at the end of the display that will be closest to the road, fasten the border to the display. Refer to **Figure 4**.

25. Slowly lift the display to the face of the structure. Use tag lines to guide the display into place.

26. When the display reaches the face of the structure, align the clips on the back of the display with the holes and stringers. Use spud wrenches to move the display into the proper position. Refer to **ED-16455** in **Appendix B** for clip mounting details.

Figure 4: Attaching Bottom Border

27. After aligning the holes, place bolts through the holes in the display clips and on the stringer. Fasten securely.

28. Remove the crane support and tag lines.

29. Apply silicone around the eyebolt holes in the top border. Place the border caps in the holes and Tek screw them into place. Refer to **Figure 5**.

30. Locate the power entrance doors.

31. Strip $^1/_2$" of insulation off of each power wire.

32. Insert the power and ground wires into the multi-tap connector according to the **Block Diagram** in **Appendix A**.

33. Tighten all set screws.

Figure 5: Installed Border Cap

Note: Ensure all set screws that hold wires into place are tight. If screws are not tight, the connection will loosen over time and the display will malfunction.

34. Set wire and multi-tap connector inside the display.
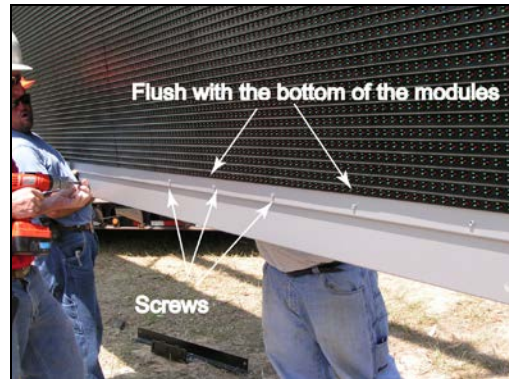
35. Close and fasten all power entrances.
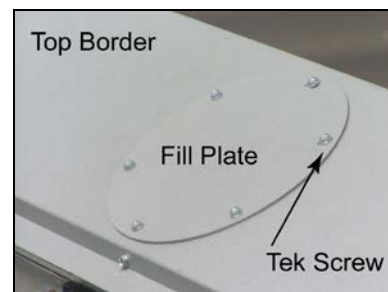
Section 3:   Air Conditioning Installation

Install the air conditioners after the display is structurally in place but before power up. For more information relating to the air conditioning installation, refer to ED-16519 in Appendix B.

3.1   Air Conditioning Installation

1. Remove the crating from the air conditioner (a/c) unit.

2. Apply tag lines to the back of the a/c unit using the lift point on the rails.

3. Lift the a/c unit above the structure and lower the unit in place.

4. Ensure the ducts align properly. Slide the unit into the ducts.

5. Using provided bolts, securely fasten the rails on the unit to the struts on the display.

6. Remove crane support.

7. Connect the power cord on the a/c unit.

8. Run the thermostat wire to the back of the display and plug it in.

3.2   Air Conditioning Test Procedure

1. Power on the a/c unit.

    Note: The thermostat should be preset to 80°.

2. Turn the thermostat to the lowest setting. The compressor will begin running.

    Note: Refer to the project-specific component layout drawing in the installation packet for thermostat location.

3. Ensure cold air is coming out of the ducts.

4. Turn the thermostat to 80° to shut the compressor off.

5. If a failure occurs at any point, contact Daktronics by calling 1-877-DAK-HELP.

Section 4: Remote Enclosure

This section outlines the wiring and initial setup for the remote enclosure. Refer to Drawing C-314820 in Appendix A for a wiring illustration.

4.1 Remote Enclosure Installation

1. Lift the remote enclosure until in rests against the column near the installation location.

2. Weld the supports on the remote enclosure to the column.

3. Remove the crane support.

4. Run the power and signal conduit to the enclosure. Use $1^1/_4$" conduit for signal and $^3/_4$" conduit for power from the breaker panel and the ISP line from the junction box.

5. Install the DSL interface box.

6. Run conduit from the bottom of the remote enclosure to the DSL interface box.

4.2 Internet and Power Connections

1. Carefully pull the fiber-optic cable through the conduit from the router to the display.

2. Route the fiber-optic cable through the bottom right corner on the rear of the display into the patch panel inside of the display.

3. Plug the fiber into the fiber patch panel plates according to the color code on the patch panel plate back.

4. Install the light and temp sensor. Connect the W-1501 4-pin connector inside the display (bottom left corner). Route W-1501 cable to the back of the V-link 1500 processor. Refer to the label on the enclosure door.

5. Run the two network cables from the iBoot to the router. For a wiring diagram refer to **ED-16517** in **Appendix B** or the project specific drawing located inside the back door of the remote enclosure.

6. Hook the two iBoot power cables together. The iBoot is bypassed because it restarts the V-link processor until the IP address is set. Reconnect the iBoot after entering the IP address and installing the router.

7. Verify the DVI cable is connected before powering up the computer.

   Note: Powering up without the DVI cable connected will cause display failure to the V-Link processor.

8. Tighten all monitor and DVI cables before powering up. If not tightened properly, a blank screen appears and the monitor will not recognize the signal.

9. Turn on the V-Link video processor before the computer or the monitor. If not, it will affect the DVI signal from the V-Net® computer to the V-Link 1500 processor.

   Note: Pressing [**CTRL**] + [**ALT**] + [**F1**] will switch the video card output order to the LCD monitor on the first output.

10. If it a two display system, push the button on the KVM switch in the upper left corner of the enclosure to switch monitors on the LCD.

11. Login to the router and enter the address supplied by the ISP to allow the router to connect to the internet.

12. Disable Norton® Internet worm protection.

13. Ensure the a/c unit (if applicable) is plugged into a different circuit than the remote enclosure. Also verify that the a/c for the remote enclosure is set between 75° and 80°.

14. Install the door locks.

    Note: The same key works for both locks.

Section 5:   Electrical Installation

Review this section, the system riser in Appendix A and ED-15904 in Appendix B with the electrician before starting electrical installation. Only certified personnel should perform the steps in Section 2.1.

5.1   Electrical Connection to Display

1. Attach the distribution panel and meter box near the bottom of the support column.

2. Attach the junction box provided by the customer near the top of the column.

3. Run conduit from the meter box to the distribution panel.

4. Run conduit from the distribution panel to the junction box at the top of the column.

5. Pull wiring through the conduit from the distribution panel to the junction box.

6. Run enough SO cable from the junction box so it can plug into the back of the display. Connect the wiring from the distribution panel to the SO cable(s).

    Note: Check the System Riser in the installation packet for the correct number of circuits.

7. Attach the multi-tap connector to the SO cable.

8. Run a flexible conduit from the distribution panel for power to the remote enclosure and optional security system.

9. After the display, the a/c unit(s) and the remote enclosure are installed, connect all multi-tap connectors.

5.2   Routing Communication Cable for the Display

1. Run $1^1/_4$" conduit from the remote enclosure to the back of the display.

2. After hanging the display, gently pull fiber-optic cable, SO cable, and W-1501 through the conduit from the remote enclosure to the display.

3. Attach the fiber-optic cable to the fiber patch panel. Match colored fiber-optic cable to the corresponding plug.

4. Use the pre-drilled hole in the back of the display for the fiber patch panel and insert the fiber-optic cable. Refer to the project-specific system riser in the installation packet.

5. Remove a module to access the fiber patch panel.

6. Attach the fiber-optic cable into the patch panel. Color match fiber-optic cable with the plug. Refer to **Figure 6**.

7. After connecting the fiber patch panel, replace the module.

8. Connect the webcam Cat-5 cable to the RJ45 jack of the display back.

Figure 6: *Fiber Patch Panel*

Section 6:   Webcam, Spare Parts Box, and Photocell Installation

6.1   Webcam Installation

Before Starting
Before starting the installation process, ensure the following parts were shipped:

- Webcam
- Webcam arm assembly
- Ethernet cable

Location

Mount the webcam arm:

- on the bottom of the display.

- so the camera is in front of the display.

- so the camera are does not block the view of the display. Refer to **Figure 7**.

Webcam Mounting
1. Attach webcam foot to the webcam base on the mounting arm.

Figure 7: Webcam Installation Locations

2. Using fish tape, feed the Ehternet cable through the holes in the webcam arm.

3. Connect the Ethernet cable to the back of the webcam. Refer to **Figure 8**.

4. Carefully lift and attach the webcam arm assembly to the display.

5. Connect the Ethernet cable to the Ethernet plug on the back of the display.

6. Ensure the camera power indicator light is on.

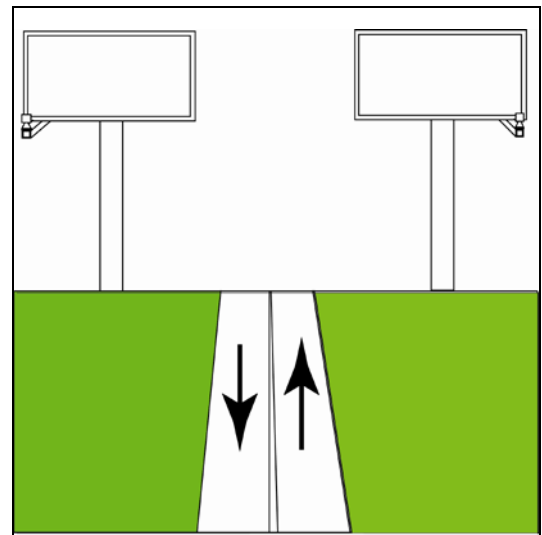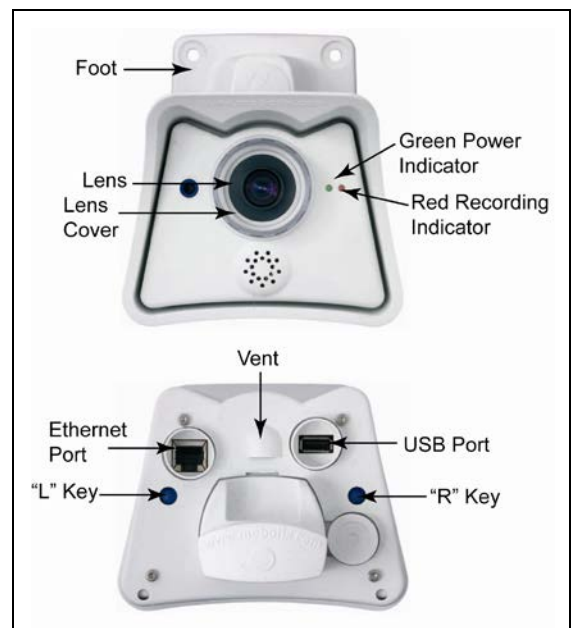7. Secure excess cable with cable ties.

Figure 8: Mobotix Webcam

8. Call Daktronics Network Operations Center (NOC) at 1-877-325-4357 and have a technician verify he or she can detect the video server. If the video server is not detected, ensure the Ethernet connection is securely attached to the camera and the assembly.

9. Work with the NOC to ensure the camera is aligned properly. If adjustment in needed, use a bucket truck to access the webcam.

6.2 Spare Parts Box Installation

To properly install a spare parts box, ensure the lid is on top, the latch is easily accessible, and the lid opens completely. If possible, mount the spare parts box by welding it to a catwalk. Do not mount the box in a location that inhibits maintenance personnel from accessing the display. Refer to **Figure 9**.

Figure 9: Spare Parts Box

6.3 Photocell Installation

1. Locate the photocell. Refer to **Figure 10**.

2. On the side of the display, find a location that will have sufficient ambient light and attach the photocell with the $1/2$" shroud bolts.

    Note: Photocells are typically attached before flying the display.

3. After hanging the display, plug the quick-connect into the back of the display.

Figure 10: Photo Sensor

4. Neatly cable-tie excess cable with UV resistant cable so it does not hang from the bottom of the display.
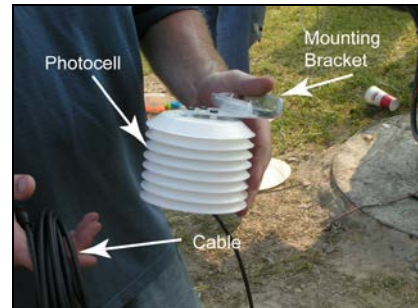
Section 7:   First-time Power Up

7.1   First-time Power Up

For additional first-time power up information refer to **ED-17509** in **Appendix B**.

1. Install the iBoot and router according to the system riser diagram in **Appendix A**. Refer to **ED-17024** in **Appendix B** for additional iBoot information.

2. Turn on the Uninterruptible Power Supply (UPS). Ensure the equipment in the remote enclosure powers up properly. Make sure the connections did not loosen during shipping.

3. After a successful boot, ensure the V-Link 1500 starts.

4. Run a test sequence from the display unit. Use the V-Link 1500 Management Utility on the PC to activate test patterns.

5. With a test pattern running to the display, troubleshoot the display and control equipment until 100% operational. Refer to **Section 7.3** for instructions on running a test pattern.

6. Ensure that the dimming is set to automatic and in functioning properly. Do so by verifying the display brightens during the day and dims at night. Cover the photocell for five to ten minutes to ensure it dims to zero.

7. Call the NOC at 1-877-DAK-HELP for assistance with the remaining steps.

8. Verify internet connectivity.

9. The NOC will verify communication and that all remote functions work.

7.2   Connecting to the Display

1. Click **Network>Configure Connection**.

2. In the *Connection Configuration Window* select **Direct Connection**. Set the appropriate COM port and set the baud rate to 115200 bps.

3. Under the *TCP/IP Connection* set the **IP address** and **socket**.

    Note: Default is socket 3001.

4. After completing the *Connection Configuration*, click **Network>Connect**. A communication status bar shows the download status.

5. After a successful connection, information such as the IP address, display size, driver version, firmware version, as well as V-Link processor displays.

7.3   Running Test Patterns

1. In the *V-Link Connection* page, click **Connect**.

2. Click **Tools**.

3. Locate the drop-down box with **Test Patterns**.

4. Choose either the **Module ID** or **Cycle All** test patterns.

5. Click **Start Test**.

6. When finished, click **Stop Test**.

7.4   Calibration

Daktronics displays are calibrated in house and should not need on-site calibration. Follow these instructions if field calibration is necessary.

1. Click the **Calibration** tab.

2. Compare the module to the colors located in the upper-left corner of the display. If one or more colors do not look right, adjust it by sliding the appropriate color bar until the module match rest.

3. Continue calibrating module by module, adjusting colors as needed.

7.5   Diagnostics

1. Click the **Diagnostics** tab.

2. Click the **Refresh** button.

3. Ensure the time is close to the time on the computer task bar. If the times do not match, communication does not exist between the computer and controller. If this happens attempt to reestablish communication by repeating the steps in **Section 7.2**.

Section 8:   Safety

This section provides safety information for working on, or near, a digital billboard display.

8.1   Personal Protective Equipment

Installation personnel are responsible for wearing appropriate Personal Protective Equipment (PPE) in all operations where there is a potential of exposure to a hazardous condition. Additionally, installation personnel should dress appropriately for the weather. Installation personnel must also follow Daktronics and customer safety requirements.

Head Protection: A Class G hardhat must be worn when employees could be exposed to falling objects or there is the risk of bumping into fixed objects.

Eye Protection: Safety glasses with side shields are required in all circumstances while performing installation work. Safety glasses must meet **ANSI Z87.1-1989**.

Foot Protection: Sturdy leather work boots are required. Steel-toe boots are recommended.

Hand Protection: Properly fitted work gloves are recommended to protect employees against lacerations, abrasions, and punctures.

Fall Protection: All installers and technicians walking or working on surfaces 6' or more above a lower level or working on lift equipment must wear a Personal Fall Arrest System (PFAS). Daktronics requires the use of a harness with the appropriate double-leg lanyard. Daktronics policy mandates 100 percent tie off. This means that at all times PFAS is required, the worker must be attached via the lanyard to an OHSA approved anchorage. Fall protection training is required for employees and is available through Daktronics. Refer to **Section 8.2**.

8.2   Personal Fall Arrest System

Installation personnel are responsible for wearing PFAS when working on surfaces 6' or more above a lower level or working in lift equipment. PFAS should consist of an anchorage, connectors, body harness, a lanyard, deceleration device, lifeline, or a suitable combination of these. Daktronics has PFAS available for check in/check out through the Safety Department.

All PFAS must be properly adjusted for each worker. Follow these guidelines for proper adjustment.

- Locate the D-ring between shoulder blades

- Locate chest strap at mid chest

- Leg straps are snug but not binding

- Proper shoulder to hip snugness

- Butt strap is under the buttocks

Anchorages must be able to support 5,000 pounds per attached employee and must be free from anchorages supporting the platforms. Anchorages must be at, or above, D-ring height.

Daktronics requires 100 percent tie-off when PFAS is required. One-hundred percent tie-off means that the lanyard is always attached to an anchorage point. A double-leg lanyard is required so personnel can attach the second leg to an anchorage before disconnecting the first.

Inspect PFAS for damage and deterioration before each use. Damage may occur from cuts, acids, tears, D-ring distortion, and frayed edges. Remove defective components from service.

8.3   Lift Equipment and Aerial Lifts

General Requirements

Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job-sites above ground:

- Extendable boom platforms

- Aerial ladders

- Articulating boom platforms

- Vertical towers

- Any combination of such devices

Specific Requirements

- Test lift controls prior to use each day to verify they are in safe working order.

- Only authorized persons shall operate aerial lifts.

- Always stand firmly on the basket floor. Do not sit, climb, or stand on the edge of the basket.

- Do not exceed manufacturer's boom and basket weight requirements.

8.4   Employee Training Requirements

The following is a list of Daktronics required or recommended classes for employees. ASCs should have all relevant training required by their company.

Advanced Fall Protection

Advanced fall protection is provided at Daktronics, and is mandatory for all employees who might be exposed to fall hazards, particularly those who will wear a PFAS.

OSHA 10 Hour for Construction

Daktronics installation personnel may face a variety of conditions on a given job site. It is mandatory that each employee involved in installation and other field work participate in an OSHA 10 Hour for Construction course.

OSHA 30 Hour for Construction

This course provides employees with more in-depth information on construction standards relevant to work they may need to perform. This course is not mandatory.

First Aid/Adult CPR

First aid and adult CPR training is strongly recommended for installation personnel.

Aerial Lifts/Bucket Trucks

Daktronics employees must be trained in the safe operation, use, and inspection of aerial lifts and bucket trucks. This course is recommended for installation personnel.

Service Platform/Ladder Way

This course covers regulations when working on, or near, service platforms and ladder ways. This course is strongly recommended for all installation personnel.

Glossary

Data Distributor: device that routes signal to the display. Display data from the controller passes through the data distributor before routing the modules within the display. The data distributor may not mount directly inside the display as a single card or may be housed in a separate enclosure with other parts.

Lanyard Attachment Ring: a ring found on the back of each module. The lanyard attached to the ring to keep the module from falling to the ground.

Latch Release: device that hold the module firmly to the display frame. There are two per module, one on the top and one on the bottom.

Light Emitting Diode (LED): low energy, high intensity lighting unit.

Line Filter: device that removes electromagnetic noise that might interfere with local communication channels from the power system. Line filters sometimes mount on brackets with power supplies. Other times they are mounted alone.

Louver: a black plastic shade positioned horizontally above each pixel row. Louvers increase the contrast level on the display face and direct LED light for easier viewing.

Module: A module consists of a display board with LEDs, a driver board or logic card, a black plastic housing, and a module latch assembly. Each module is individually removable from either the front or back of the display.

Module Latch: an assembly using a rotating retainer bar to hold the module firmly to the display frame. There are two per module, one near the top and one near the bottom.

Multi-Line Controller (MLC): circuit board that passes display data that can be turned on and off. For LED displays, a pixel is the smallest block of LEDs that can generate all available colors.

Power Supply: device that converts AC line voltage from the panelboard to low DC voltage for driver boards. One power supply may power multiple modules.

Termination Block: an electrical connection point, usually used to connect internal power and signal wires to wires of the same type coming into the display from an external source.

Appendix A: Reference Drawings

Appendix A contains drawings that are not project specific. Refer to the Project Installation Packet for project-specific drawings. Any project specific drawings take precedence over the drawings listed in Appendix A. The Daktronics drawing number is located in the bottom right corner of the drawings. Refer to Section 1.1 for information regarding how to read the drawing number. The drawings in Appendix are listed in alpha-numeric order.

Block Diagram; AC interconnections, 1-PH ....**Drawing B-259073**
Layout, Border Shroud, 128×464-23, Billboard ....**Drawing B-265098**
Layout, Border Shroud, 176×624-23, Billboard ....**Drawing B-265458**
Assembly, 5 TON AC with Frame/Mounting; Billboard ....**Drawing B-265940**
Layout, Border Shroud, 160×336-20, Billboard ....**Drawing B-269981**

Appendix B: Supplementary Manuals

The Daktronics manual number is located on the front of the manual, or in the lower left corner of the sheets.