# DSF-600 Series

## DAKT-0204-02

Display Manual

*DD2599750* *Rev 0—01 September 2013*

DAKTRONICS

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DAKTRONICS

**DD2599750**
**Product 1734**
**Rev 0—01 September 2013**

DAKTRONICS, INC.

# Table of Contents

# Section 1: Introduction

## 1.1 How to Use This Manual

This manual explains the installation, maintenance, and troubleshooting of this video display system. For additional information regarding the safety, installation, operation, or service of this system, refer to the telephone numbers listed in **Section 5.2**. This manual is not specific to a particular installation.

**Important Safeguards:**

- Please read and understand the installation instructions before beginning the installation process.
- Do not drop the control equipment or allow it to get wet.
- Do not disassemble the control equipment or electronic controls of the display; failure to follow this safeguard will make the warranty null and void.
- Disconnect the display power when not in use or when servicing.
- Disconnect the display power before servicing the power supplies to avoid electrical shock. The power supplies run on high voltage and may cause physical injury if touched while powered.

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

## 1.2 Resources

**Figure 1** illustrates a Daktronics drawing label. This manual refers to drawings by listing the last set of digits and the drawing size indicator preceding them. In the example, the drawing would be referred to as **Drawing D-1007804**.

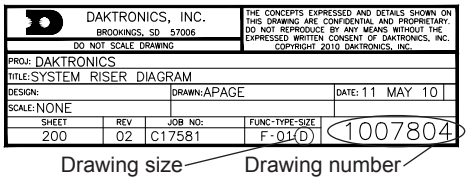



***Figure 1:** Drawing Label*

All references to drawing numbers, appendices, figures, or other manuals are presented in bold typeface, as shown in the example below.

"Refer to the System Riser Diagram, **Drawing D-1007804**, in **Appendix A** for power and signal routing information."

In addition, any drawings referenced within a particular section are listed at the beginning of that section. Drawings may be referenced by title or by title and drawing number as seen in the following example:

**Reference Drawing:**

System Riser Diagram ..... **Drawing D-1007804**

Daktronics identifies manuals by the DD number located on the cover page of each manual. For example, this manual would be referred to as **DD2602501**.

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

## 1.3 Display Model Number

Most display components have a white label that lists the part number. The component part number uses the following format: 0P-XXXX-XXXX (circuit board) or 0A-XXXX-XXXX (multi-component assembly). **Section 5** contains the Daktronics Exchange Policy as well as the Repair & Return Program. Refer to these instructions if any display components need replacing or repairing.

Each video display system has a model number that explains the display specifications.

| **DSF-650-6MN-HHHxWWW** | | |
|---|---|---|
| DSF | = | Product series |
| 650 | = | Product generation |
| 6MN | = | Pixel pitch/layout |
| HHH | = | Matrix height |
| WWW | = | Matrix width |

## 1.4 Daktronics Nomenclature

**Figure 2** explains the module labeling method in more detail.

**Figure 3** illustrates how Daktronics numbers modules on a video display.

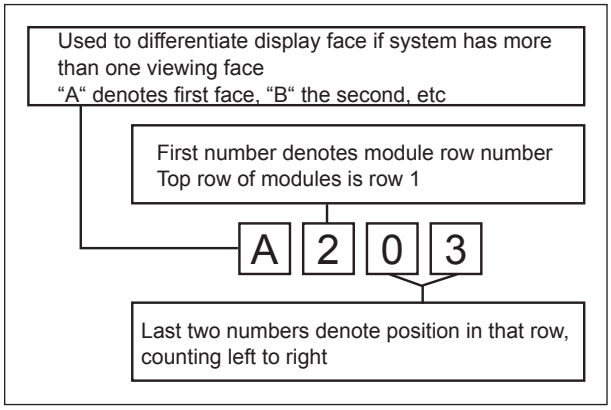



***Figure 2:*** *Module Numbering Breakdown*

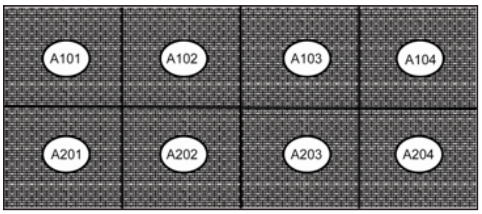



***Figure 3:*** *Module Numbering*

| Part Type | Part Example | Part Number |
|---|---|---|
| Assembly | Circuit board and the plate or bracket to which it mounts | 0A-XXXX-XXXX |
| Individual circuit board | ProLink router (PLR) | 0P-XXXX-XXXX |
| Wire or cable | SATA cable | W-XXXX |

Most circuit boards and components within this video display carry a label that lists the part number of the unit. If a circuit board or assembly is not found in the replacement parts list in **Section 5.1**, use the label to order a replacement. **Figure 4** illustrates a typical label. The part number is in bold.


***Figure 4:*** *Typical Label*

# Section 2: Cabinet Installation

## 2.1 DSF-600 Cabinet

**Reference Drawing:**

Shop Drawing ..... **Contract Specific**

## 2.2 Transporting

- Only persons who are familiar with the content of this manual are authorized to install and /or transport the cabinet. Refer to the DSF Shipping Frame Field Instructions in **Appendix B**.
- Always use appropriate hoisting equipment while moving the unit. The equipment must be calculated in function of the load (e.g. crane, winch, straps, etc...)
- The device must be properly lifted, taking into account the forces on lifting eyes, stability, etc...

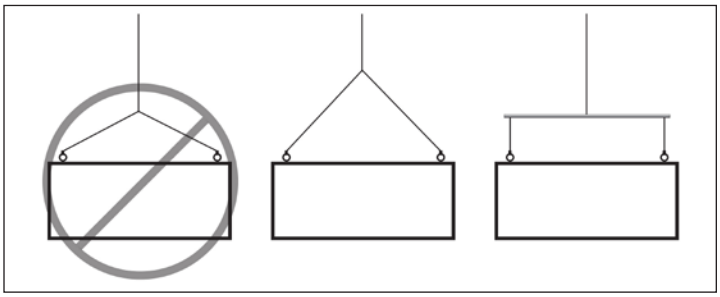


***Figure 5:*** *Display Lifting Options*

- During handling, the device can be guided by hand, but the operators must be careful that hands or feet do not get pinched. Provide appropriate safety equipment such as safety shoes, gloves, and a helmet.
- During transport (as well as during all stages of handling), avoid large shocks because of potential damage to the cabinet or display.

### Transportation - Specific Guidelines

- The unit should be placed on an appropriate support structure (cradle) to ensure stability.
- The cradle should always be locked to the vehicle (e.g. with straps, bolts, etc...).

### Installation - Specific Guidelines

- The cabinet can be installed only on pre-assigned locations, taking into account conditions such as temperature, height, explosion danger, etc.
- Refer to the mounting instructions when installing the cabinet.
- Follow the local electrical codes when installing the electrical system (cable section and type, grounding, fuses, etc.)

- Make sure to connect the power source cable correctly to avoid short-circuits. An incorrect connection may cause electrical shocks or even fire.
- Make sure to properly connect the grounding cable.

## 2.3 Mounting Instructions

These are the instructions to attach the display to its permanent location. The display must be removed from the shipping pallet. It will then be moved with a proper lifting system to its base. Then secured to the base.

1. Open the display door, insert the 5.5mm hex tool in the keyhole and turn counterclockwise. Refer to **Figure 6**.

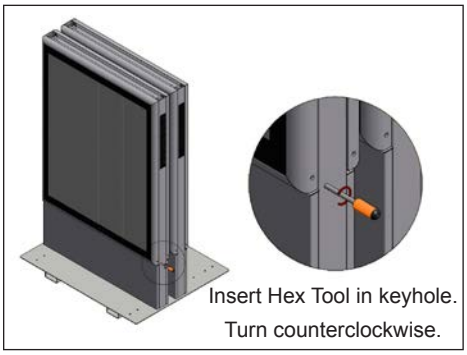



***Figure 6:*** *Open Display Door*

2. Remove the base cover, slide the cover upwards and pull it backwards. Refer to **Figure 7**.

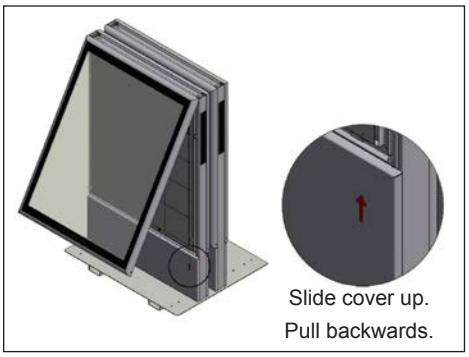



***Figure 7:*** *Remove Base Cover*

3. Push the display door firmly to secure the door.
4. Attach the proper lifting system to the display frame.
5. To free the display from the shipping pallet, remove the bolts.
6. Lift display and position it above the anchor points on the permanent base. Refer to **Figure 8**.
7. Level the display and secure the display to the anchor points with a washer (1) and nuts (2) per bolt as shown in **Figure 8**.

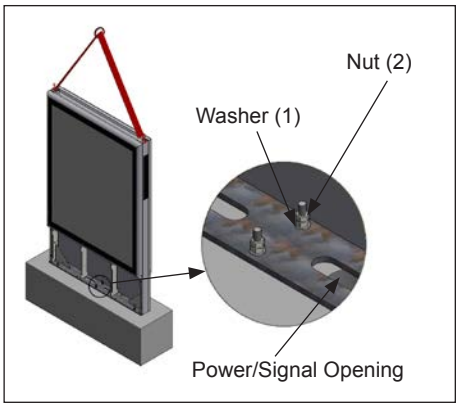



***Figure 8:*** *Mount and Secure*

8. Remove the lifting tool once the display is secured to the anchor points.

**Note:** At this point the power and signal should be connected to the display. Otherwise the base cover will need to be removed again to make these connections.

9. Insert the 5.5mm hex tool in the keyhole, turn it counterclockwise to open the door as shown in **Step 1**.

10. Replace the base cover into proper place. Push the door firmly to close it. Refer to **Figure 9** to see the display in its final state.

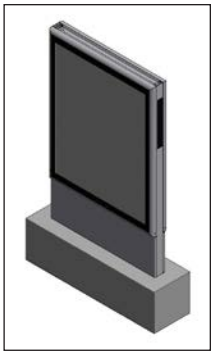


***Figure 9:*** *Final*

# Section 3: Electrical Installation

**This display is intended to be installed in accordance with the requirements of Article 600 of the National Electric Code® and/or other applicable local codes. This includes proper grounding and bonding of the sign.**

**This display is suitable for wet locations. Daktronics engineering staff must approve any changes that may affect the weather tightness of the display. If ANY modifications are made to the weather tightness of the display, detailed drawings of the changes MUST be submitted to Daktronics engineering staff for evaluation and approval, or the warranty will be null and void.**

**Only qualified individuals should access the electrical components of this display and its associated equipment.**

## 3.1 Power Summary

**Reference Drawing:**

System Riser Diagram ..... **Contract Specific**

Power from the termination panel breaker routes to the Power In jack on the power supplies. From there, power routes to the individual modules. ProLink routers (PLRs) are powered off of the display controller power supplies. Refer to contract specific riser diagram for detailed power information. Refer to the Power Specifications, Street Furniture **Drawing B-1129095** in **Appendix A** for details.

| STREET FURNITURE SF POWER SPECS | | | | |
|---|---|---|---|---|
| **MATRIX SIZE** | **MAX WATTS** | **120VAC 1PH 60HZ AMPS** | **120/240V, 1PH, 60HZ (3 WIRE + GND) LINE 1 AMPS LINE 2 AMPS** | **240VAC 1PH 50HZ AMPS** |
| 240 X 192 | 1556 | 12.97 | 120/240 VAC NOT AVAILABLE FOR THESE SIZES | 6.49 |
| 288 X 192 | 1859 | 15.49 | | 7.75 |

## 3.2 Signal Summary

**Reference Drawing:**

Layout & Block Diagram ..... **Contract Specific**

Refer to contract specific layout & block diagram for information on how data passes from one PLR to the modules and shows power harnessing and component placement.

Each PLR sends data to the modules within the display; refer to the contract-specific layout and signal drawing for further information. Signal exits from the PLR's Fiber Port B jack and routes to Fiber Port A on the next PLR via fiber-optic cable. Refer to **Figure 10**, as it illustrates a typical signal routing layout. Refer to the contract-specific Config Drawing for further information.

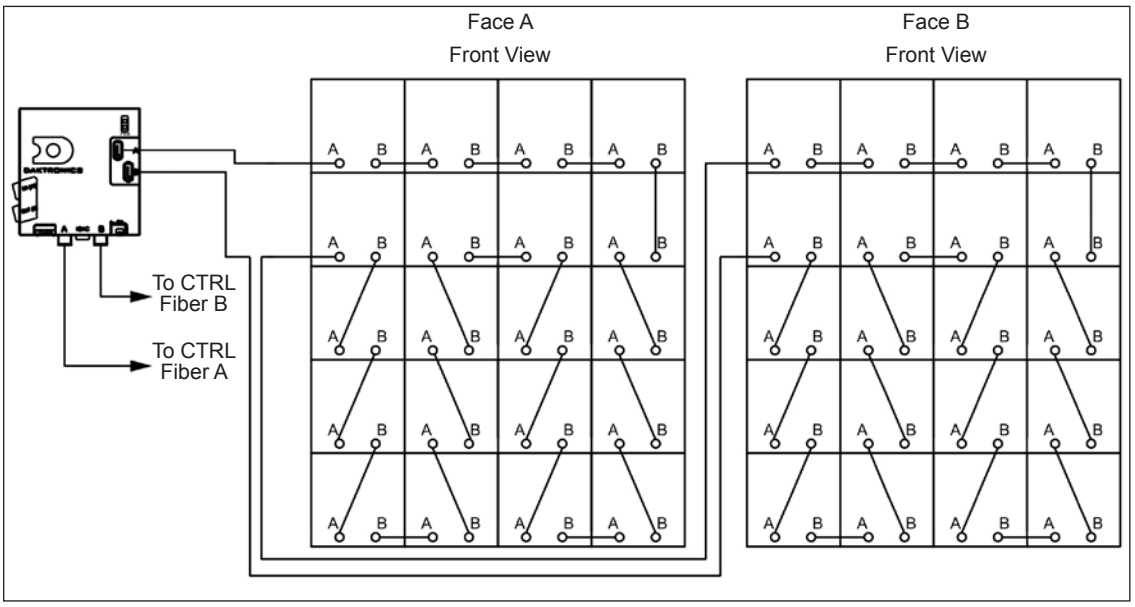



***Figure 10:*** *Signal Routing*

## 3.3 Common Connectors

When pulling a connector plug from a jack, do not pull the wire or cable; detach the jack itself. Pulling the wires may damage the connector. These connectors are not found in every display.

1. **Fiber-Optic Connector**
   LC connectors are square. To remove an LC connector, depress the small clip on the jack and gently remove. Refer to **Figure 11**.

2. **Water-Tight SATA Cable Connector**
   Daktronics uses a wide variety of SATA cables and SATA cable connectors. **Figure 12** illustrates one of the most commonly used connectors. To disconnect the SATA cable connector, squeeze the locking clips on both sides of the connector inward and pull the plug out of the jack.

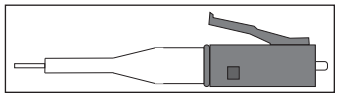


***Figure 11:*** *LC Fiber-Optic Connector*

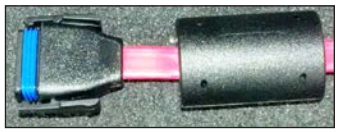


***Figure 12:*** *SATA Cable Connector*

## 3.4 Control Cable

**Reference Drawing:**

System Riser Diagram ..... **Contract Specific**

Refer to the contract specific riser diagram for specifications on signal and power cable runs. The display controller (DMP-8065 or VIP-5060) reads the video or image signal and feeds the information to the router for distribution. It processes the video data file. Refer to the **DD2596357** DMP-8065 Quick Guide or **DD2596497** VIP-5060 Quick Guide Street Furniture in **Appendix B** for more information on the controller.

The minimum bend radius for this fiber-optic cable is 15 times the outside diameter of the cable or 7". Refer to contract specific system riser diagram for the outside diameter of the cable in this system. All fiber-optic runs must be continuous, except where noted on the System Riser Diagram.

## 3.5 Display Power

**Reference Drawings:**

Power Entrance; Field Termination Detail ..... **Drawing B-1128366**
System Riser Diagram ..... **Contract Specific**

All display grounding, power routing, and termination must meet or exceed local codes and standards.

Correct power installation is imperative for display operation. These subsections give details on display power installation. Only qualified individuals should attempt the electrical installation; untrained personnel should not attempt to install the displays or any of the electrical components. Improper installation could result in serious equipment damage and could be hazardous to personnel.

Refer to contract-specific documentation to determine who is responsible for providing conduit and pulling cable through the conduit.

### Grounding

The display must be properly grounded according to the National Electric Code® (NEC®) and any other local or national codes, or the warranty will be null and void.

The display system must have proper earth-ground connection. Proper grounding is necessary for reliable equipment operation, as it protects the equipment from destructive electrical disturbances and lightning.

The material of an earth-ground electrode differs from region to region and varies with conditions present at the site. Consult local grounding 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 if designed to do so. A qualified inspector must approve the support structure and grounding methods.

### Power Installation

1. Connect the grounding electrode cable at the ground bar attached to the term panel or on ground lug located behind the display's base cover.

2. Use a disconnect that opens all ungrounded phase conductors.

The DSF-600 series display uses this power entrance to terminate power. Refer to **Figure 13** and Power Entrance, Field Termination Detail **Drawing B-1128366** in **Appendix A** for installation details.

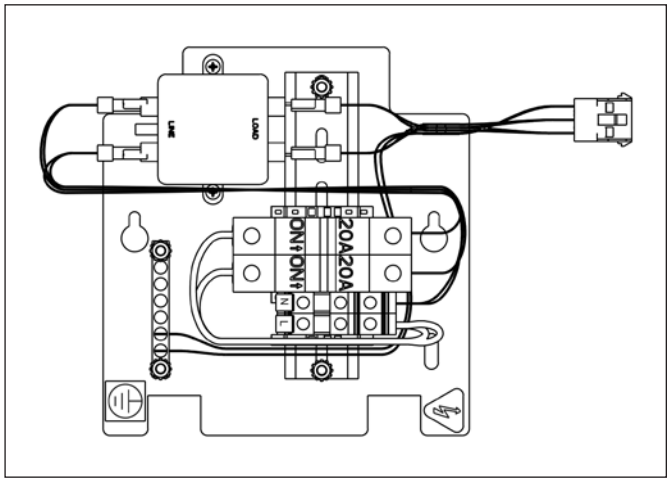



***Figure 13:*** *Power Entrance*

### Main Disconnect

Refer to contract specific system riser diagram to determine who must supply a fused main distribution/disconnect and the necessary wiring for power distribution to multiple display termination panels.

The disconnect mechanism must be located in direct line of sight from the display it controls. This allows workers to keep the disconnect mechanism in view while performing display maintenance.

Power disconnects capable of locking in the open position may be located in an out-of-sight location.

The customer or contractor is responsible for conduit and wire unless stated otherwise on the contract-specific documentation.

### Power Termination at the Termination Panel(s)

All power routing and termination must comply with local and national codes and standards. Display grounding must agree with local and national codes and standards.

When terminating power at the termination panel, the individual power phases must balance as evenly as possible. Current draw per line, as noted on the contract specific system riser diagram, is stated as the high leg current draw.

Refer to Power Entrance, Field Termination Detail **Drawing B-1128366** in **Appendix A** for power termination information.

## 3.6 Display Wiring

**Reference Drawings:**

Layout & Block Diagram ..... **Contract Specific**
Power/Signal Diagram ..... **Contract Specific**

## 3.7 Display Continuity Check

Before turning on power to the display, perform a continuity check to ensure no short circuits occurred due to shipping vibration.

**Caution:** Before performing these steps, ensure all breakers are off.

1. Locate the term panel. Refer to **Figure 14**.
2. Use an ohmmeter and place one probe on the neutral terminal and another probe to each of the taps on the breaker wire terminal. Repeat the same test for each breaker.
3. Place one probe to the earth ground and one to each of the breaker wire terminals and repeat for each breaker.

All tests should result in a reading of infinity or indicate an open circuit.

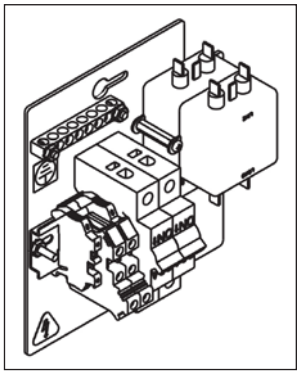


***Figure 14:*** *Term Panel*

## 3.8 Display Power Up

1. Turn on the main disconnect to power up the display and verify the circuit breakers inside the display are also switched on.
2. Power up the control system to ensure it is fully operational before proceeding.
3. Run an initialization/power up script or animation/logo on the display.

## 3.9 Power Redundancy

**Reference Drawing;**

Layout & Block Diagram ..... **Contract Specific**

Redundant power is included in the system using an N+1 power supply redundancy configuration for protection against module power failure. If a power supply fails, the redundant power supply provides backup power to the affected module. In regular conditions, the redundant power supply remains auxiliary.

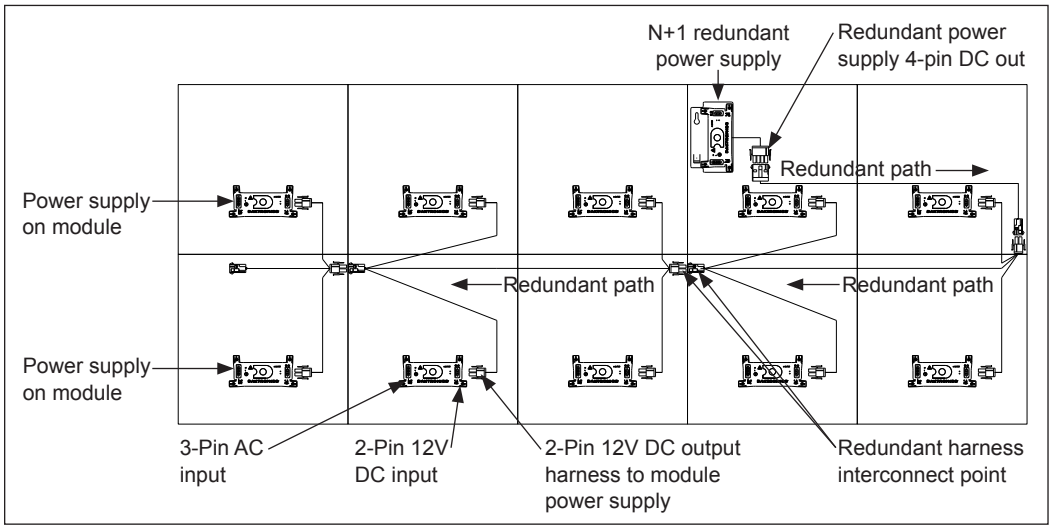



***Figure 15:*** *Power Redundancy*

### Testing

To test the redundant power wiring scheme/setup, with power applied to the display, locate the last module(s) on the redundant harnessing bus system. Refer to the contract specific drawing for wiring information and component placement. Disconnect the 3-pin AC power to the power supply on the module. Verify the LEDs or indicator lights on the module remain lit to ensure the module continues to work after the AC power is disconnected.

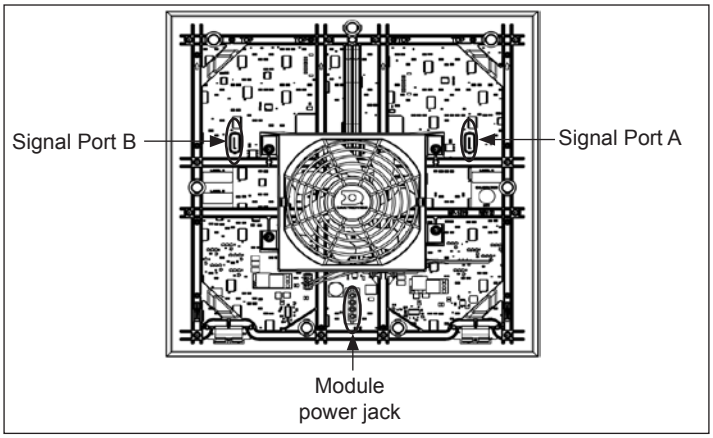



***Figure 16:*** *Module Rear with Jacks*

## 3.10 Signal Redundancy

**Reference Drawing:**

Layout & Block Diagram ..... **Contract Specific**

There are two different levels of signal redundancy: module redundancy, which is part of the standard design, and full-data redundancy.

### Standard Module Redundancy

Module redundancy provides a primary and redundant SATA connection throughout the entire display to protect the system from signal failure. If a module in the middle of a signal chain fails, the redundant signal path takes over and limits the signal failure to that single module.

### Standard Control System

Standard data redundancy provides a primary and redundant fiber connection between the display controller (DMP-8065 or VIP-5060) and the PLR. If the primary fiber connection fails, the redundant takes over.

### Testing

To test the module redundancy wiring, locate the contract-specific Signal Interconnect Drawing to verify where the PLRs are located within the display. The display needs to be powered and running content. Disconnect the SATA cable from Port A of each PLR individually and verify all modules still display content correctly; reconnect the SATA cable. Disconnect the SATA cable from Port B of each PLR individually and verify all modules still display content correctly; reconnect the SATA cable.

To test the fiber redundancy, locate the contract-specific Signal Interconnect Drawing to verify where the PLRs are located within the display. The display needs to be powered and running content. Disconnect the fiber from port A of the display controller. Verify the display is displaying content directly, then reconnecting fiber to port A. Repeat the test with fiber removed from port B and reconnect the fiber cable.

IDM (if available) can also verify the system is working as intended. Refer to the **DD2097912** IDM User Manual.

## 3.11 DSF Series

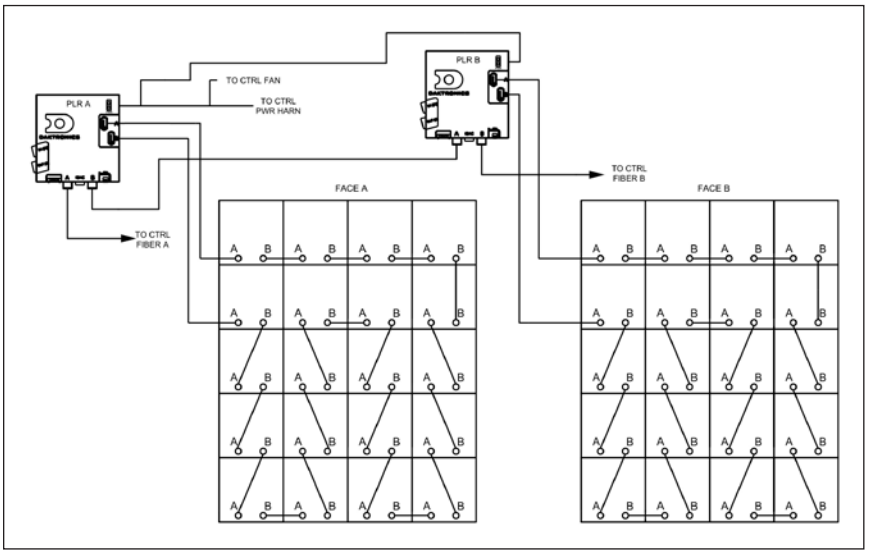



***Figure 17:*** *Signal Routing*

**Reference Drawings:**

Layout & Block Diagram ..... **Contract Specific**
Power/Signal Diagram ..... **Contract Specific**

DSF-600 displays with the embedded DMP-8065 controller consist of the standard product with the added controller and are controlled with Venus® 1500 software.

### System Startup

The displays show a boot sequence shortly after the power is turned on. The information in this sequence is very useful when using Venus® 1500 software to configure the display. Ensure all display communications and network connections are made before turning the display on.

### *Boot Sequence*

The information in the boot sequence includes the following:

- Firmware name & version
- Display size (pixels high by pixels wide)
- Dynamic Host Configuration Protocol (DHCP) assigned name
- IP address & state
- MAC address
- Configuration port
- Status port
- Management port (used to access configuration)
- Description

### *Startup Checklist*

- □ Confirm all communication equipment is installed according to the provided documentation.
- □ Confirm any necessary network connections have been made.
- □ Confirm the Venus® 1500 software is installed on the control computer.
- □ Inspect the peripheral equipment (temperature sensor, light sensor, etc.) for proper installation.

## Network & Communication Installation

This section explains the network settings of DSF-600 displays with the embedded controller and gives basic guidance for integrating a display with a customer's network. It also provides basic information about available standard communication options.

Daktronics is not responsible for setting up displays on a Wide Area Network (WAN) but does assist with setting up communication on a Local Area Network (LAN) or directly to a laptop.

When installing network and communication:

- Do not turn on the display until all network and communication installation is complete.
- Have a laptop with Internet access on-site (preferred).
- Work with a customer's IT professional for network integration (preferred).

### *Network Connection*

DSF-600 displays with the embedded controller use Dynamic Host Configuration Protocol (DHCP) by default, allowing the customer's network to configure the display and eliminating manual configuration of the player.

When the display is connected to a network that supports DHCP, a default DHCP name similar to "DAKTXXXXXX", "XXXXXX" representing the last six digits of the player's MAC address, is used. This information displays during the boot sequence.

Ports 4500-4525 must be open for communication on the switcher or router.

### *Computer Connection*

When connecting the display directly to a computer, and Dynamic Host Configuration Protocol (DHCP) is not available, the display's AutoIP feature assigns an IP address. AutoIP addresses fall into the range of 169.254.0.0 to 169.254.255.255. The IP address displays during the boot sequence when the display first turns on.

### *Static IP Address Setting*

Setting a static IP address on a display requires the following:

- Laptop with Java®, Silverlight®, DisplayFind (installed from the Venus® 1500 V4 software disk in the Utilities folder), and Internet Explorer® installed
- Display IP address (provided by customer)
- Ethernet patch cable to connect computer to display

Work with Daktronics Technical Support when programming a static IP address on the player.

## 3.12 Software Installation

### *Software Installation*

Venus® 1500 software is the standard control software for DSF-600 series displays with the embedded controller. Install Venus® 1500 software either from a disc or from www.daktronics.com/venus1500. Click the Downloads tab and Venus1500setup.exe. Registration is required for Venus® 1500 software and must be completed within 90 days of installation. Refer to the Venus® 1500 Help File for registration instructions.

1. Install Venus® 1500 software to a hard disk before use.
2. Place the Venus® 1500 installation CD into the CD-ROM (presume D:).
3. Installation should start automatically within a few seconds. If it does not, click the Start button and select Run from the menu. Type "D:\CDStart.exe" and press Enter.
4. Follow the instructions on the screen. SETUP will copy the necessary files to run Venus® 1500 V4 software to the hard disk and create Venus® 1500 in the Start menu.

   **Note:** Venus® 1500 software installs to the C:\Program Files\Daktronics directory by default; this is the recommended location.
5. Registration is required to use Venus® 1500 software. Follow the steps in the Registration section to register your software.

## System Requirements

| Minimum System Requirements | Recommended System Requirements |
|---|---|
| Windows XP®, Vista®, 7®, or 8® with current updates applied (32- or 64-bit versions) | Windows XP®, Vista®, 7®, or 8® with current updates applied (32- or 64-bit versions) |
| 1 GHz or higher Processor | 1.6 GHz or higher Processor |
| 512MB RAM or higher | 1.5GB RAM or higher |
| 1GB free hard disk space (additional space required for content storage) | 1GB free hard disk space (additional space required for content storage) |
| Monitor and video adapter capable of 1024x768 resolution or higher with DirectX® 9 support | Monitor and video adapter capable of 1280x1024 resolution or higher with DirectX® 9 support |
| Microsoft® Internet Explorer® 7 or higher | Microsoft® Internet Explorer® 7 or higher |
| .NET 3.5 Framework Service Pack 1 | .NET 3.5 Framework Service Pack 1 |
| CD-ROM or DVD drive | CD-ROM or DVD drive |
| Keyboard and mouse or other compatible pointing device | Keyboard and mouse or other compatible pointing device |

## Software Configuration

Ensure all display communications and network connections are made before using Venus® 1500 software to configure a display. After everything is installed, turn the display on, allow it to complete the boot sequence, then follow the steps below:

1. Click the Windows® **Start** button. Hover over **All Programs>Daktronics>Venus 1500 V4** and click **Venus 1500**.

2. Click the **Application** button, highlight **Configure**, and click **Displays**. Refer to **Figure 18**.

3. Click **Add Display...** from the **Display Management** window or right-click in the **Display Management** window and select **Add Display...**. Refer to **Figure 19**. The software searches for displays on the local network and returns a list of displays.

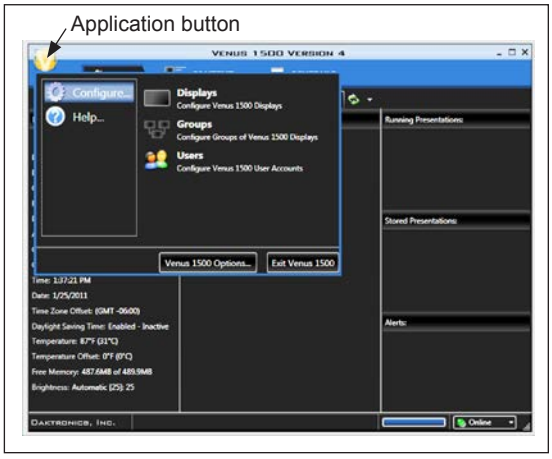



***Figure 18:*** *Beginning Display Configuration*

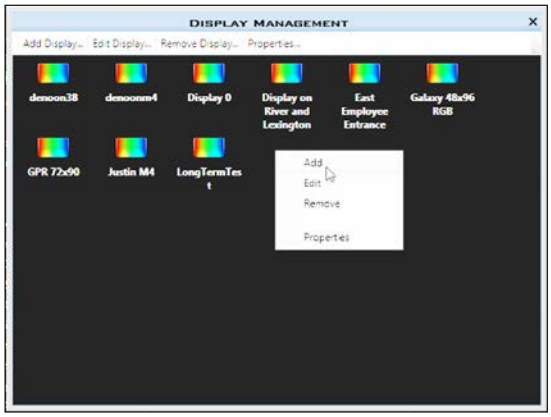



***Figure 19:*** *New Display Configuration*

4. Select the desired display to configure and click **Continue**. Refer to **Figure 20**.

   **Note:** If the display is password-protected, enter the password on the **Authentication** page. Save the password in a secure location. Physical access to the display is required to reset the password.

5. Give the display a name to easily identify it when the **Display Found** prompt opens. This prompt also provides a brief description of the display. Click **Continue**.

   **Note:** If the display is not found, refer to the **Venus® 1500 Help File** for manual configuration instructions.

6. Select the correct time zone for the display's location. Greenwich Mean Time (GMT) with country and city/region are the guides used to select the correct time zone.

7. Click **Back to Start** in the **Summary** box to return to the beginning of the process to configure another display. Click **Finish** to complete display configuration. Refer to **Figure 21**.

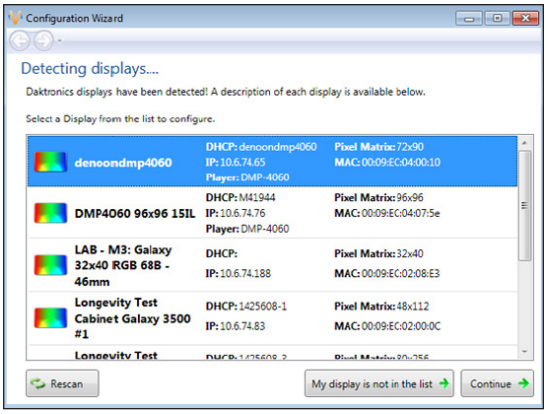



***Figure 20:*** *List of Displays*

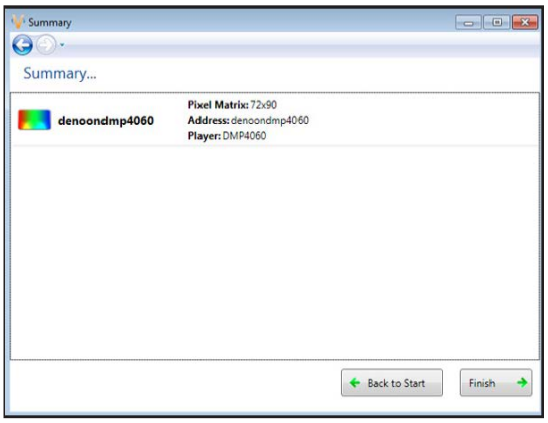



***Figure 21:*** *Display Configuration Summary*

## 3.13 DSF-600 with Embedded Controller Light Sensor Mounting

**Reference Drawing:**

Assembly, Light Sensor, 3.5' Harness, 12V; SF .....**Drawing B-1122209**

Light detectors, illustrated in **Figure 22**, monitor the light levels around the display and adjust the LED intensity accordingly.

To mount the light sensor on the display border (if not previously factory-installed), refer to the instructions on Assembly, Light Sensor, 3.5' Harness; SF **Drawing B-1122209** in **Appendix A**. Connect the light sensor harness to the 4 pin to circular harness connected to the PLR. Refer to display schematic for more details.

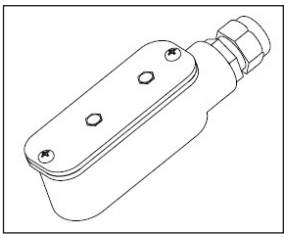


***Figure 22:*** *Photo Sensor*

# Section 4: Maintenance & Troubleshooting

**Important Notes:**

- **Turn off display power before performing any repair or maintenance work.**
- **Only qualified service personnel may access internal electronics.**
- **Dirt and contaminants may enter the display if it is operated without the fan filters in place. These contaminants may cause premature failure of the electronic components. Operating the display with dirty fans and filters will make the warranty null and void.**
- **Daktronics product managers' engineering staff must approve any changes that may affect the display's weather tightness. This includes, but is not limited to, border shrouding, back sheets, cooling fans, fan filters, and filler panels. If any changes are made to the display's weather tightness, submit detailed drawings to Daktronics engineering staff for evaluation and approval, or the warranty will be null and void.**

## 4.1 Cabinet Description

Year of delivery : _____

The cabinet includes these items:

- Steel frame (full straight leg)
- Aluminium base frame
- Claddings/face sheets
- Aluminium door frames (including safety glass pane)
- Ventilation structural parts
- Electrical component panels

## 4.2 Instructions prior to cabinet maintenance

- *Do not perform any maintenance in wet or rainy weather conditions*
- ***Do not perform any maintenance in heavy wind or stormy weather conditions, ie. Wind speed shall not exceed 30 mph.***
- The product may occasionally be damaged. Do not allow metal cuttings to enter the product during maintenance work.
- Do not expose the product to flammable or explosive gasses.
- Some edges of our product may be sharp. Use caution when working on the unit or use proper hand protection.
- While replacing any parts, only use original Daktronics components. Consult Daktronics for information on spare parts or any technical issue. Refer to **Section 5.1** for part information.

## 4.3 Accessing the inside of the cabinet

Unlock the door on the side of the cabinet where maintenance actions will be taken. The door will hinge open automatically.

## 4.4 CHECKLIST - Maintenance (To be Performed Yearly)

- □ Cut off the main power supply.
- □ Clean the cabinet.

  **Note:** The outside of the cabinet can be cleaned with hot water and standard (mild) cleaning detergents. Do not use strong detergents (such as acetone) to clean the box because this will damage the coating. Also, do not use a pressure cleaner because moisture will penetrate the cabinet. The inside of the cabinet can be cleaned with a damp cloth.
- □ Check for any loose, damaged, or broken electric wiring; replace where necessary.
- □ Check for any other damaged or missing parts; replace where necessary.
- □ Check all bolts and screws that may be loose or missing. Replace and tighten any missing screws or bolts.
- □ Grease the door lock mechanism, as well as the lock plates, on moving parts.
- □ Check for any sharp edges due to damaged parts; replace where necessary.
- □ Check for corrosion on metal parts; replace where necessary.
- □ Clean the rubber door seal profiles (where applicable) and check them for proper placement and any damages, bringing them in place again or replacing where necessary.
- □ Close the box and turn on the power supply.
- □ Test for proper operation.

## 4.5 Internal Component Removal

**Reference Drawing:**

Layout & Block Diagram ..... **Contract Specific**

Internal components for Street Furniture are installed on brackets in the display using keyholes.

### Cabinet Access

1. Locate the component to remove on the contract specific layout and block diagram.
2. Open door to gain access to modules.
3. Remove modules as required using the module removal tool (**Daktronics Part #TH-1198**).
4. Disconnect power to the display by flipping the power breakers inside display.

5. Use a nut driver to loosen the set screw holding the mounting plate to the display.

6. Detach the cables and gently remove the component from the display.

Reverse these steps to install a new component, always disconnecting the power to the display first. Securely tighten the mounting screw.

## 4.6 DSF-600 module

**Figure 23** and **Figure 24** show a front and rear view of the module.

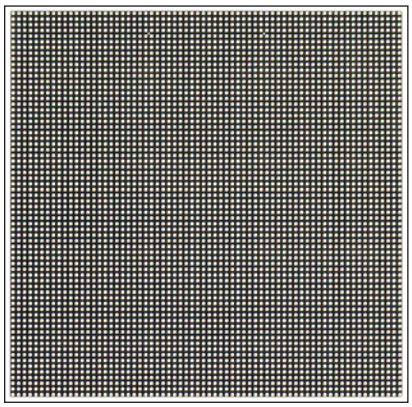


***Figure 23:*** *Module Front*

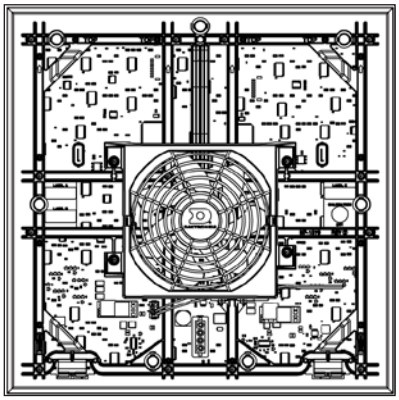


***Figure 24:*** *Module Rear w/ Fan*

### Module Access

To remove a module from a front-access display:

1. Disconnect power to the display.

2. Open door to gain access to modules.

3. Use a module removal tool (**Daktronics Part #TH-1198**) to pull top portion of module out slightly. Refer to **Figure 25.**

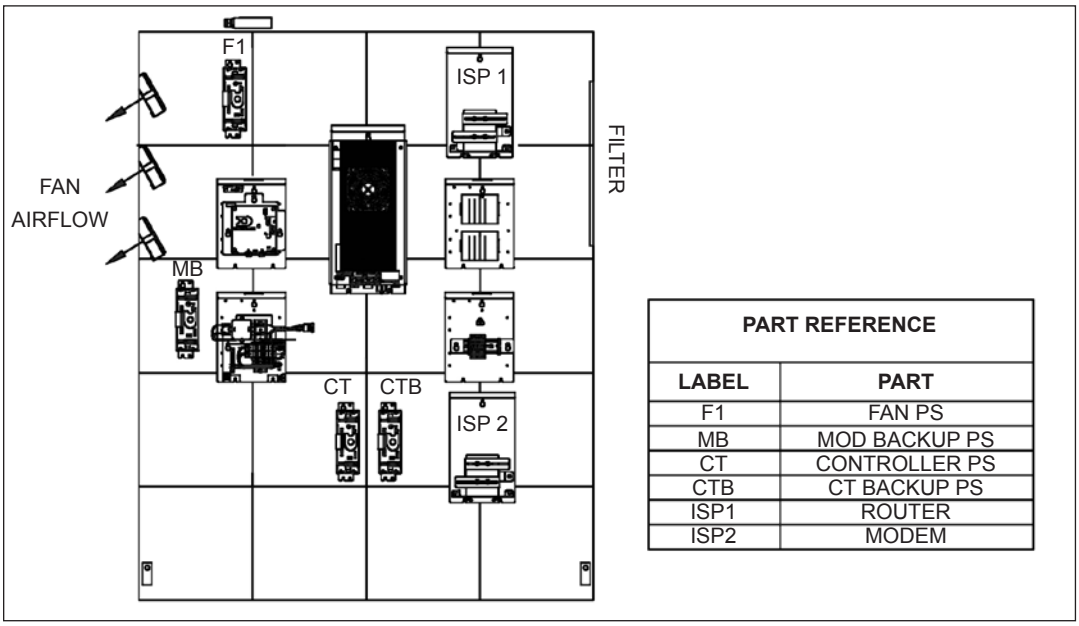
4. Lift up module and pull it from the display just far enough to reach around to the back of the unit. Attach one end of a safety lanyard to the rings on either the top or bottom of the module and the other end to a secure location within the display to prevent the module from falling if dropped.

5. Disconnect the power and signal cables from the rear of the module.

***Figure 25:*** *Front Access*

Reverse these steps to install a module in a display.

### Typical Component Layout




| PART REFERENCE | |
|---|---|
| **LABEL** | **PART** |
| F1 | FAN PS |
| MB | MOD BACKUP PS |
| CT | CONTROLLER PS |
| CTB | CT BACKUP PS |
| ISP1 | ROUTER |
| ISP2 | MODEM |

***Figure 26:*** *Component Layout*

## 4.7 Display Components

For information on removing and replacing internal components, refer to **Section 4.**.

### ProLink Router

The ProLink router (PLR) is a circuit board that passes display data from the ProLink6 control system modules and other PLRs.

**Figure 27** illustrates a PLR. Refer to the **DD1735784** ProLink Router 6X5X Installation & Maintenance Manual in **Appendix B** for further information.

For information on removing a PLR, refer to **Section 4.3**.

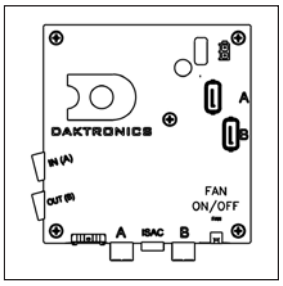



***Figure 27:*** *PLR*

### Power Supply

**Figure 28** illustrates a typical power supply, also referred to as a power module. The power harnesses connected to the unit vary depending on type and overall display application. The power LED (DS1) illuminates when the unit is receiving incoming power.

**Caution:** Disconnect display power before servicing the power supplies to avoid electrical shock. The power supplies run on high voltage and may cause physical injury if touched.

The power supplies are either mounted to the component mounting sheet or to the rear surface of the module mounting sheet.

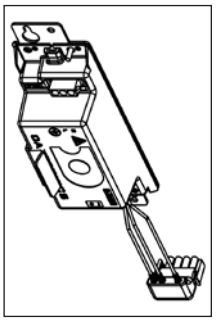


***Figure 28:*** *Flush Mount PSU*

If a power supply fails, refer to **Section 5.2** for details on the repair process.

### Line Filters

Line filters remove electromagnetic noise that might otherwise interfere with local communications channels from the power system. Refer to **Figure 29**. The line filter is mounted to the sectional termination panel.

***Figure 29:*** *Line Filter*

## 4.8 Other Components

### Video Image Processor

The video image processor (VIP) is an interface that drives video to the display while also dimming, providing gamma and color controls, and displaying test patterns. **Figure 30** illustrates a VIP-5060. Refer to the **DD2596497** VIP-5060 Quick Guide in **Appendix B** for further information.

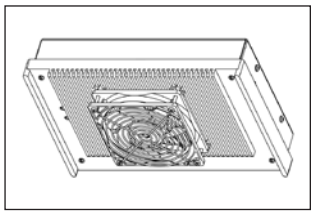


***Figure 30:*** *VIP-5060*

### DMP-8065

The DMP-8065 reads the video or image signal and feeds the information to the router for distribution. It processes the video data file. Refer to **Figure 31**. For more information refer to the **DD2596357** DMP-8065 Quick Guide in **Appendix B**.

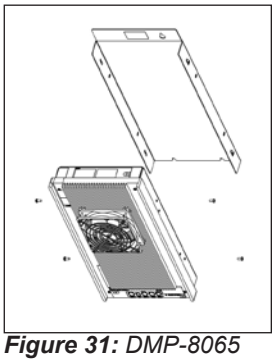


***Figure 31:*** *DMP-8065*

## 4.9 Ventilation Systems (with Fans & Filters)

**Shut off power to the display when not in use. If the power is left on when the display is not operating, the filters may require cleaning and replacing more often, and the electrical components are exposed to excess condensation that shortens their life.**

Check the display ventilation fans after 1,500 hours of operation and every 1,500 hours after to ensure the display cools properly. Check the fans and filters more often if the display is located in a dusty or harsh weather environment (i.e., along a gravel road with dust-laden air).

- 1,500 hours is equivalent to 83 days if the display operates for 18 hours a day, and the power to the display is turned off when not in use.
- 1,500 hours is equivalent to 62 days if the display runs non-stop for 24 hours a day.

To check the operation of the cabinet ventilation fans, choose one of the following methods:

- Run an "all on white" test pattern on the display. Fans will operate automatically while this test pattern is displayed. Check for fans that do not rotate or do not operate smoothly. Replace any that do not run smoothly.
- Unplug the fan control cable from the PLR. Refer to **Figure 32**. The fans will turn on by default. Check for fans that do not rotate or do not operate smoothly. Replace any that do not run smoothly. After the inspection, plug the fan control cable back into the PLR.

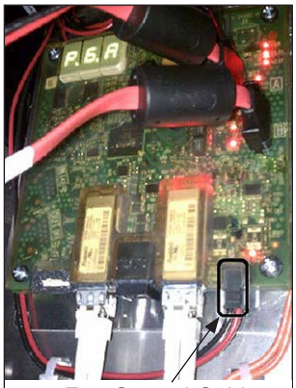



***Figure 32:*** *Fan Test*

### Ventilation Maintenance

After replacing 50 percent of the fans, Daktronics recommends replacing all cooling fans to reduce the associated maintenance costs that may incur with increased heat buildup from fan failure.

This display includes filters that are either disposable or cleanable. After one year or 1,500 hours of operation, remove the filter and replace it with a new filter or clean the existing filter. If the display has cleanable filters, clean the filters with water and a mild detergent, such as dish soap. Compressed air can also be used to clean the filters if these criteria are met:

- The nozzle is held at least 6" away from the filter.
- The pressure is no greater than 60 psi.
- The air is blown through the filter in the opposite direction from which air normally flows.

For information on ordering replacement filters, refer to the replacement parts list in **Section 5.1**. Failure to change or clean the filters may cause the display to overheat, decreasing the display life.

If the display provides rear access only, remove the back panels to service the fans and filters.

## 4.10 Structural Inspection

Perform annual visual inspections of the display to facilitate problem repairs and to lengthen display life.

- Check for paint and possible corrosion, especially at structural tie points and on ground rods.
- Check, tighten, and replace the fasteners as required.
- Check the electronic components closely for signs of corrosion.
- At least once a year, check the inside of the display for signs of water intrusion, i.e., water stain marks. Water can enter a display where weather stripping has loosened or deteriorated, where fasteners have loosened, allowing gaps in the panels, or where moisture may enter around the hardware in the top of the display.

## 4.11 Troubleshooting

This table lists some problems that may be encountered while operating the display. Next to each problem are troubleshooting steps that may help to resolve it. While this list does not cover all possible problems that may occur, it does cover those that occur most often.

| Display Problem | Troubleshooting Steps |
|---|---|
| Entire display is blank. | • Ensure the display controller is receiving power by checking the power indicator light on the front of the controller. Refer to display layout for location.<br>• Ensure the display is receiving power and all breakers are turned on. When power is applied to the display, power supply LEDs should turn on.<br>• Ensure content is being sent to the display.<br>• Ensure the fiber-optic signal cable is connected to the DMP. The input signal should be locked. If the input signal is not locked, check the fiber connections. |
| Section of display is blank. | • Ensure the power status LEDs on the modules, power supplies, and ProLink routers (PLRs) in the blank section are on.<br>• Ensure the connections to the PLR are secure. Change the connections with one another to test.<br>• Check the SATA cable connections between the modules and the PLR in the blank section. Check the connection to the left most module first (from the front of the display).<br>• Ensure the modules are receiving logic power. Signal will not pass through a module that does not receive logic power. |
| Whole display is blank or garbled. | • Check the power status LED on the PLR in the blank section.<br>• Verify the status indicator digit on the PLR is flashing.<br>• Ensure the connections to the PLRs are secure. Change the connections with one another to test.<br>• Check the PLR connections in the garbled section. |
| Entire display is garbled or uncontrollable. | • Check the status LEDs on the PLR and Display Controller to ensure they are receiving power.<br>• Ensure the fiber-optic signal cable is connected to the VIP. The input signal should be locked. If the input signal is not locked, check the fiber connections. |
| Module is blank. | • Check the power status LEDs on all power supplies connected to the module.<br>• Check the SATA cable input into the module and the output from the previous module or PLR. |
| Single module is garbled. | • Check the SATA cable input to the module and the output from the previous module or PLR.<br>• Ensure all connections on the module power supplies are tight. A garbled module can be an indicator of power supply failure. A module with no power is blank and does not pass signal to the next module. |

# Section 5: Replacement Parts

## 5.1 Replacement Parts List

| Part Description | Part Number |
|---|---|
| I-Boot G2+ | 0A-1690-1201 |
| DMP-8065 | 0A-1734-2003 |
| Light Sensor | 0A-1734-2005 |
| VIP-5060 | 0A-1734-2014 |
| ProLink Router (PLR) | 0A-1734-2019 |
| Module | 0A-1734-8206 |
| 65W Power Supply | A-2476E |
| 240V Surge | A-3241 |
| 120v Surge | A-3242 |
| I-Boot Expansion | A-3257 |
| Module Fan | B-1071 |
| Cabinet Fan | B-1100 |
| Filter | EN-2241 |
| 3' LC-LC Fiber | W-1659 |
| 10' LC-LC Fiber | W-1864 |
| 28" SATA | W-2410 |
| 6' SATA | W-2411 |

## 5.2 Daktronics Exchange and Repair & Return Programs

To serve customers' repair and maintenance needs, Daktronics offers both an exchange program and a repair & return program.

### Exchange Program

Daktronics unique Exchange Program is a quick service for replacing key parts in need of repair. If a part requires repair or replacement, Daktronics sends the customer a replacement, and the customer sends the defective part to Daktronics. This decreases display downtime.

## Before Contacting Daktronics

Identify these important part numbers:

Display Serial Number: _____
Display Model Number: _____
Contract Number: _____
Installation Date: _____
Sign Location (Mile Marker Number): _____
Daktronics Customer ID Number: _____

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 |
| Financial institutions, petroleum, sign companies, gaming, and wholesale/retail establishments | 866-343-3122 |
| Department of Transportation, mass transits, airports, and parking facilities | 800-833-3157 |

2. **After receiving the new exchange part, 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. **Daktronics will charge 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.

4. **If the replacement part does not solve the problem, return the part within 30 working days, or Daktronics will charge the full purchase price.**
   If, after the exchange is made, the equipment is still defective, please contact Customer Service immediately. Daktronics expects immediate return of an exchange part if it does not solve the problem. The company also 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.
   **Fax:** 605-697-4444

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

4. **Enclose:**

   - Contact name
   - Address
   - Phone number
   - RMA number
   - Clear description of symptoms
   - Case number

### Shipping Address

Daktronics Customer Service
P.O. Box 5128
201 Daktronics Dr.
Brookings, SD 57006

## 5.3 Daktronics Warranty & Limitation of Liability

The Daktronics Warranty & Limitation of Liability is located in **Appendix D**. The warranty is independent of extended service agreements and is the authority in matters of service, repair, and display operation.

# Glossary

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

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

**Line Filter:** a device that removes electromagnetic noise from the power system to avoid interference with local communications channels. Line filters sometimes mount on brackets with power supplies. Other times they may mount alone on a bracket.

**Louver:** a 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 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 the rear of the display.

**Pixel:** the smallest single point of light on a display that can be turned on and off. For LED displays, a pixel is the smallest block of light emitting devices that can generate all available colors.

**Power Supply:** a device that converts AC line voltage from the termination panel to low DC voltage for one or module driver boards. One power supply may power multiple modules.

**ProLink Router (PLR):** a circuit board that passes display data from the ProLink6 control system modules and other PLRs. The ratio of PLRs to modules varies with display application.

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

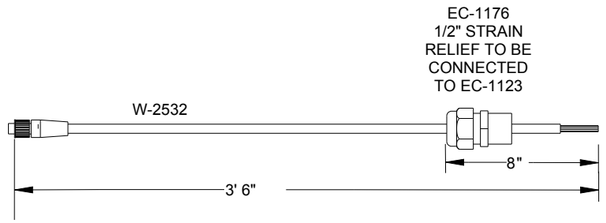
**Video Image Processor (VIP):** an interface that drives video to the display while also dimming, providing gamma and color controls, and displaying test patterns.

# Appendix A: Drawings

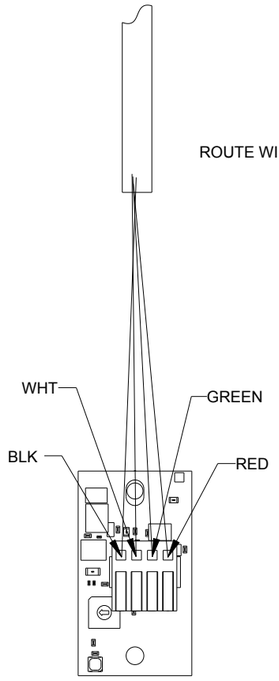
**Refer to Section 1.2 for information regarding how to read the drawing number.**

**These drawings offer general information pertaining to most DSF displays and are listed in alphanumeric order. Any contract-specific drawings take precedence over the general drawings.**

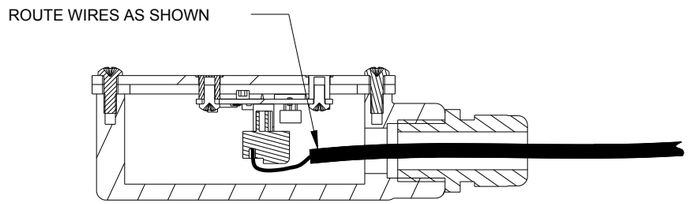
*ASSEMBLE AS SHOWN*




*HARNESS ASSEMBLY*
(NOT TO SCALE)



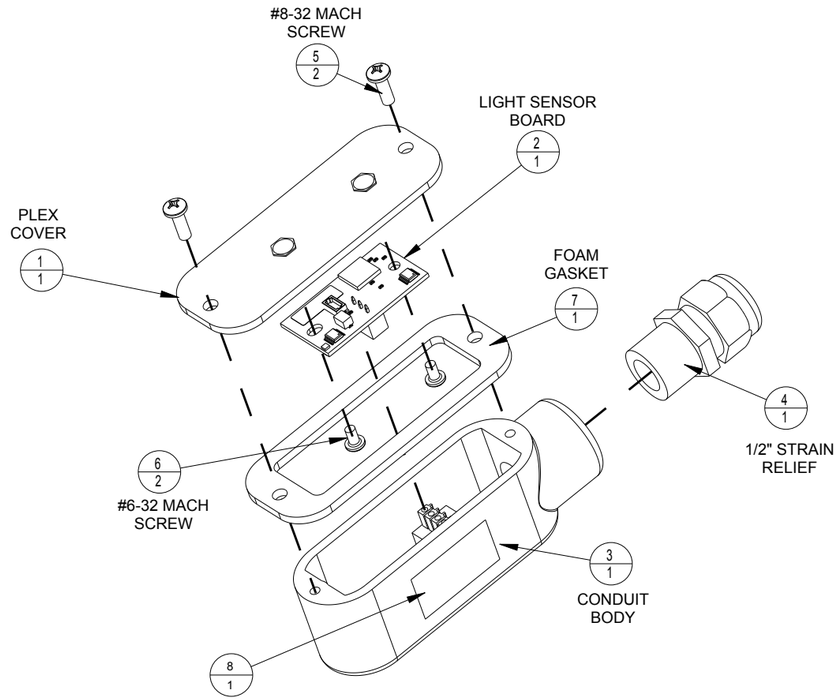

*WIRING DETAIL*




*WIRE ROUTING*
*SECTION VIEW*

*LIGHT SENSOR PINOUTS*

| P-1281 PIN NO. | WIRE COLOR | PCB TERM PIN NO. | PCB LABEL |
|---|---|---|---|
| 1 | RED | 1 | +12V CAN |
| 2 | GREEN | 2 | CAN H |
| 3 | WHT | 3 | CAN L |
| 4 | BLK | 4 | GND CAN |




ASSEMBLY
ZEBRA LABEL
***ATTACH LABEL HERE***
SEE LABEL VIEW FOR
PRINTING DETAILS

*SENSOR ASSEMBLY VIEW*

*0A-1734-2005*

*LIGHT SENSOR ASSEMBLY NOTES*

1. REMOVE THE BACKING FROM THE GASKET ADHESIVE AND STICK THE GASKET TO THE UNDERSIDE OF THE CLEAR FACE.

2. INSERT THE UNTERMINATED END OF W-2532 THROUGH THE STRAIN RELIEF AND THE END OF THE HOUSING. MOUNT THE STRAIN RELIEF IN THE HOUSING.

3. SLIDE A 2" PIECE OF PT-1008 HEAT-SHRINK TUBING ONTO THE UNTERMINATED CABLE END. STRIP THE JACKET 1.5" AND CONNECT WIRES TO PCB TERMINALS AS SHOWN IN THE TABLE BELOW. ROUTE WIRE BEHIND PCB AS SHOWN IN WIRE ROUTING SECTION VIEW. SLIDE THE TUBING TO BRIDGE ACROSS THE END OF THE JACKET AND HEAT TO SHRINK.

4. SET ADDRESS SELECTOR SWITCH ON PCB TO ADDRESS 2

5. MOUNT THE PC BOARD TO THE STANDOFFS.

6. REMOVE REMAINING BACKING FROM HS-2095.

7. ATTACH THE CLEAR FACE TO THE HOUSING MAKING SURE TO ALIGN HOLES FOR HARDWARE INSTALLATION. SCREWS SHOULD ONLY BE FINGER TIGHT.

8. TIGHTEN AND STRAIGHTEN RELIEFS AT LOCATIONS SHOWN. STRAIN RELIEFS SHOULD BE TIGHT ENOUGH TO RESIST SLIDING BY HAND.

{ASSY #} HREV: {XX}
SN: {XXXX}
MFG DATE: {MM/DD/YYYY}
WO#: {XXXXXX}

LABEL VIEW
SCALE 3/4

| INDEX | NAME | QUANTITY |
|---|---|---|
| 1 | 0M-1102603 | 1 |
| 2 | 0P-1247-0038 | 1 |
| 3 | EC-1123 | 1 |
| 4 | EC-1176 | 1 |
| 5 | HC-1144 | 2 |
| 6 | HC-1179 | 2 |
| 7 | HS-2095 | 1 |
| 8 | LL-2285 | 1 |

| REV | DATE: | | BY: |
|---|---|---|---|

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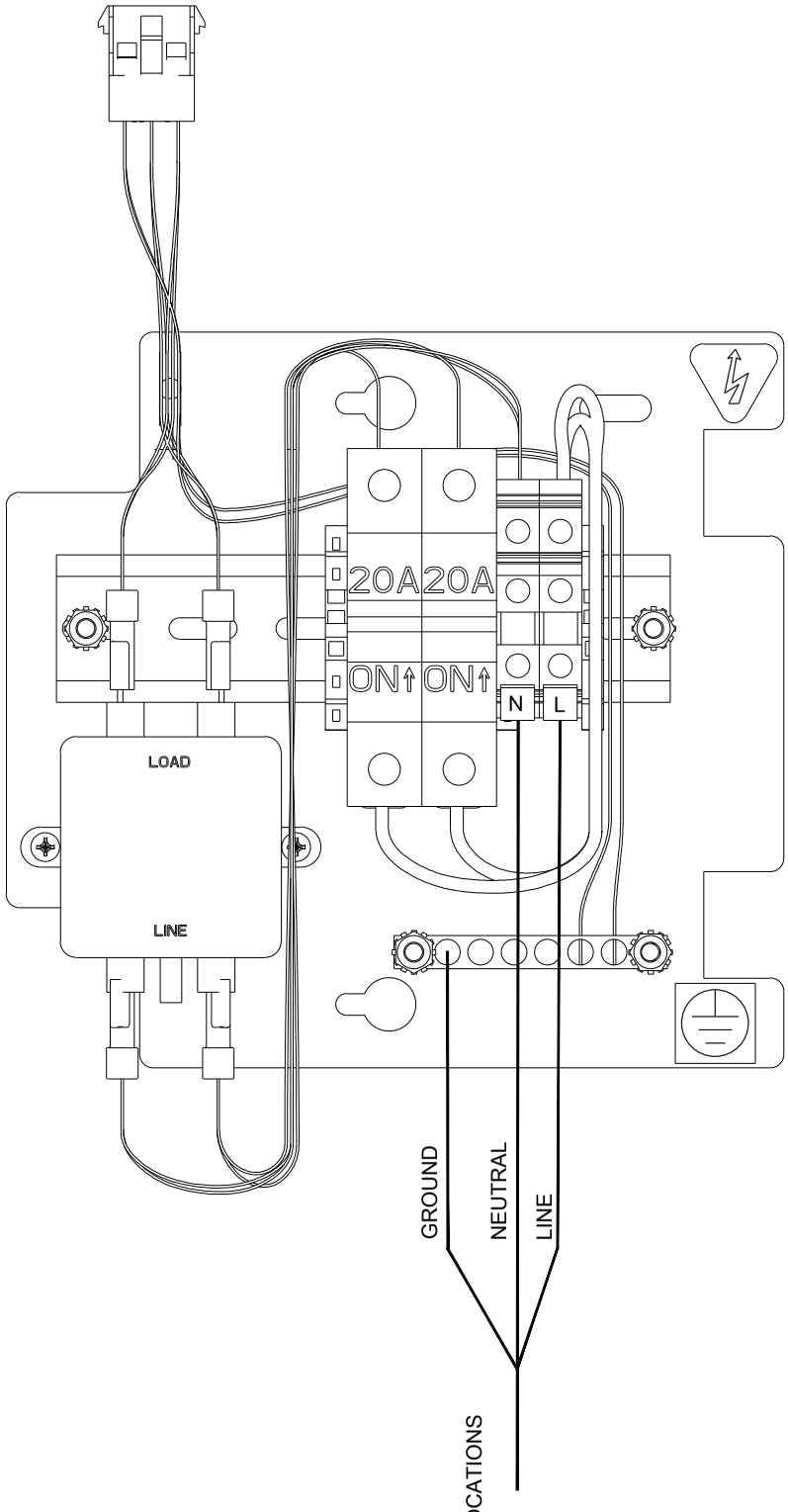
| | | | |
|---|---|---|---|
| PROJ: | COMMERCIAL PRODUCTS DISPLAY COMPONENTS | | |
| TITLE: | ASSY, LIGHT SENSOR, 3.5' HARNESS, 12V; SF | | |
| DESIGN: | NWINTER | DRAWN: NWINTER | DATE: 23-JAN-13 |
| SCALE: | 1=2 | | |

| SHEET: | REV | JOB NO: | FUNC-TYPE-SIZE | |
|---|---|---|---|---|
| 1 OF 1 | 00 | P 1327 | E - 10 - B | 1122209 |




IT IS THE RESPONSIBILITY OF THE ELECTRICAL INSTALLATION CONTRACTOR TO ENSURE THAT ALL ELECTRICAL WORK PERFORMED ON SITE MEETS OR EXCEEDS ALL LOCAL & NATIONAL ELECTRIC CODES FOR WIRING AND SPECIFICATIONS.

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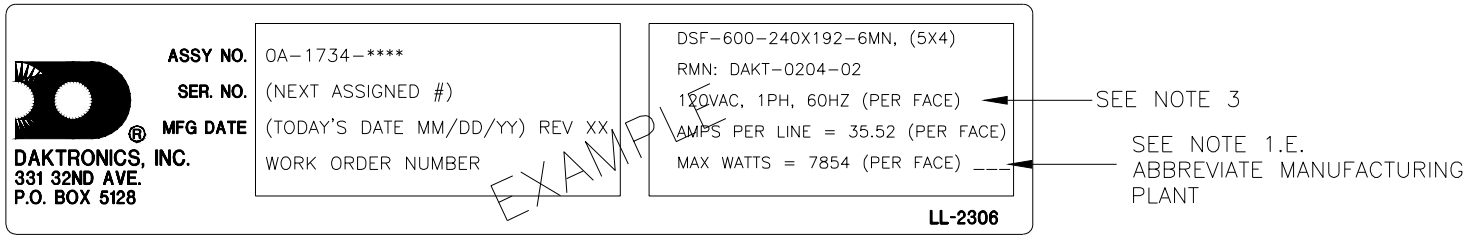
| | | | | |
|---|---|---|---|---|
| PROJ: STREET FURNITURE | | | | |
| TITLE: POWER ENTRANCE; FIELD TERMINATION DETAIL | | | | |
| DESIGN: LSOPER | | DRAWN: LSOPER | | DATE: 22 FEB 13 |
| SCALE: NONE | | | | |
| SHEET | REV | JOB NO: | FUNC-TYPE-SIZE | 1128366 |
| 1 OF 1 | 00 | P1734 | F - 01 - B | |

| REV | DATE: | BY: | |
|---|---|---|---|
| 03 | 06 JUN 14 | LCS | ADDED 5X3<br>ADDED "PER FACE" TO LABEL<br>REMOVED 120/240 COLUMN |
| 02 | 2 AUG 13 | LCS | REMOVED UNUSED SIZES<br>UPDATED POWER<br>CHANGED TO A SIZE DRAWING |
| 01 | 16 APR 13 | LCS | ADDED DISPLAY LABEL INSTRUCTIONS |

# STREET FURNTIURE POWER SPECS PER FACE

| MAXTRIX SIZE | MAX WATTS | 120VAC 1PH 60HZ AMPS | 240VAC 1PH 50HZ AMPS | AGENCY RMN |
|---|---|---|---|---|
| 240 X 144 | 1236 | 10.3 | 5.15 | DAKT-0204-02 |
| 240 X 192 | 1556 | 12.97 | 6.49 | DAKT-0204-02 |
| 288 X 192 | 1859 | 15.49 | 7.75 | DAKT-0204-02 |

EXAMPLE PRODUCT IDENTIFICATION LABEL




NOTES:

1. POWER SPECIFICATION LABEL INSTRUCTIONS:
   A. REFER TO CHART FOR POWER SPECIFICATION INFORMATION.
   B. REFER TO BELOW EXAMPLE.
   C. LOCATE THE DISPLAY SIZE.
   D. IDENTIFY VOLTAGE TYPE:
      - FOR 120/240VAC, 1PH, 60HZ USE THE LARGEST NUMBER UNDER EITHER LINE 1 OR LINE 2 FOR THAT SIZE.
      - FOR 240VAC, 1PH, 50HZ, LIST AMPS GIVEN.
      - FOR 120VAC, 1PH, 60HZ, LIST AMPS GIVEN.
   E. IDENTIFY MANUFACTURING PLANT WHERE SHOWN ON MAX WATTS LINE

2. REFER TO SHOP DRAWING FOR OVERALL DISPLAY POWER REQUIREMENTS.
3. IDF FACE CONFIGURATIONS HAVE MULTIPLE POWER ENTRANCES. BOTH FACES MUST BE LABELED WITH POWER.

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PROJ: STREET FURNITURE
TITLE: PWR SPEC, DSF-600-6MN-(240-288) X 192
DESIGN: LSOPER
DRAWN: LSOPER
DATE: 04 MAR 13
SCALE: NONE
SHEET: 1 OF 1
REV: 03
JOB NO: P1734
FUNC-TYPE-SIZE: R - 01 - B
1129095

# Appendix B: Supplementary Documents

**This section includes the following:**

- **DD2594516** Installing and Configuring a DataProbe iBoot G2 for Street Furniture
- **DD2596357** DMP-8065 Quick Guide
- **DD2596497** VIP-5060 Quick Guide Street Furniture
- **DD2626171** DSF-600 Series Shipping Frame Field Instructions
- **DD1735784** ProLink Router 6X5X Installation & Maintenance Manual (included with the PLR)

# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## General Description

The iBoot-G2+ is a network attached, IP addressed, web controlled AC power switch. Anyone with a web browser can access iBoot-G2+ to perform power On, Off, or Power Cycle (Reboot or Power Burst). iBoot-G2+ uses two levels of password security. A simple Web browser interface makes it easy to control power from anywhere in the world with a click of a mouse.

### *Expansion to Three Outlets*

***Figure 1:*** *iBoot Installation Example*

iBoot-G2+ can be linked to two expansion units, iBoot-Exp to control three outlets. All three outlets are controlled and managed though the iBoot-G2+ web page and CLI. Each outlet is independently controlled. Each outlet is independently controlled. AutoPing can be used to control the main and expansion units independently as well.

## Hardware Installation

### *Ethernet Connections*

iBoot-G2+ supports 10/100 Ethernet using the cable supplied, or other suitable unshielded twisted pair (Cat 5) cabling. Link (amber) and Activity (green) LEDs on the network connector indicate when the network connection is properly established.

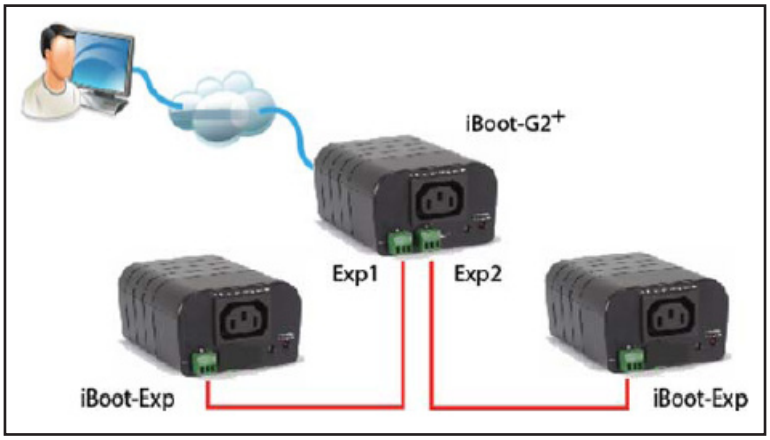


***Figure 2:*** *Expansion to Three Outlets*


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## *Power Connections*

Connect the device to be powered ON and Off to the IEC receptacle market A/C Outlet, An IEC 320 to d.

If a cord with a different terminating receptacle is required, be sure it is properly rated and meets all the required local electrical standards. If the device to be powered uses an IEC320 receptacle and detachable power cord, an IEC to IEC extension cord can be used.

Make sure that the combined load of all controlled devices down not exceed 12 Amps for 105-125VAC or 10 Amps for 210-240VAC.

An LED Indicator next to the Switched Outlet will be On to indicate that the power is On at that outlet. This LED will turn Off to indicate that the power is Off to the outlet.

Connect the supplied power cord to the connector labeled AC Input, and the other end to your AC source. If a power cord with a different terminating plug is required, be sure it is properly rated and meets all the required local electrical standards.

## *Expansion Connections*

iBoot-G2+ has two Expansion Ports, Exp1 and Exp2 for connection to iBoot-Exp, or for use as General Purpose Inputs and Outputs (GPIO). Mode settings on the iBoot-G2+ determine how the expansion ports function.

Connections to the iBoot-Exp are made using screw terminal blocks. The screw terminal blocks are on removable connectors for easy cable fabrication.

Make sure screw terminals are tightened securely and that there are no loose strands of cable, or excessive stripped wires. Ensure the cable jacket is not being crimped.

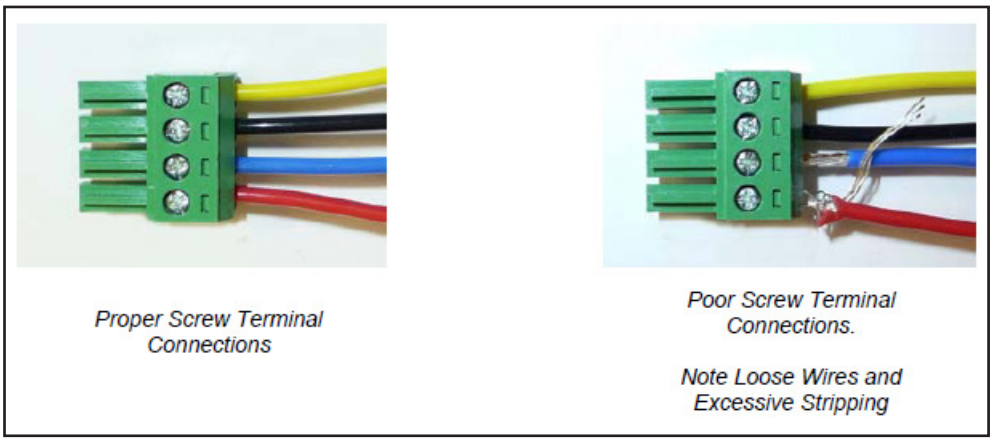


***Figure 3:*** *Proper and Poor Screw Terminal Connections*

### Connecting to iBoot-Exp

Terminal blocks are connected pin-to-pin with the iBoot-Exp as shown:


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

Connect:

| Function | iBoot-G2+ | iBoot-Exp |
|---|---|---|
| Power | V+ Power Out | V+ Power In |
| Feedback | I Input | O Output |
| Ground | G Ground | G Ground |
| Command | O Output | I Input |

Expansion units (iBoot-Exp) are shipped with a cable for easy connection to the iBoot-G2+. Maximum cable length is 1000 ft. (305 m) using 22 AWG wire.

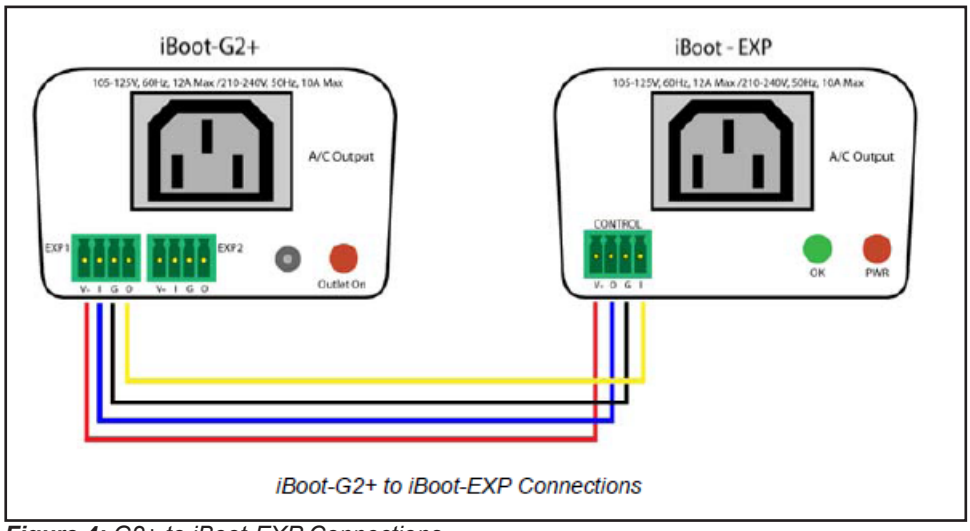


***Figure 4:*** *G2+ to iBoot-EXP Connections*

## Connecting to General Purpose I/O

| Function | iBoot-G2+ | Description |
|---|---|---|
| Power | V+ Power Out | This is +12 VDC power out from the iBoot-G2+ Maximum current 100 mA |
| Feedback | I Input | Input for status signals. Dry Contact input or Open Collector. |
| Ground | G Ground | Signal Ground for Input and Output |
| Command | O Output | 2N3904 NPN Transistor. 100 mA Maximum |


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## iBoot Mounting

1. Locate the status LEDs on the top of the iBoot.
2. Slide the iBoot into the mounting bracket with the LEDs on the top and with the rounded edge of the iBoot aligned with the short side of the mounting bracket.
3. Verify the iBoot is secure in the mounting bracket.
4. Slide the flange on the mounting bracket into the mounting holes on the back wall of the display.
5. Secure the bracket to the display by screwing it to the back wall though the keyhole knockout.
6. Connect the incoming power cable to the bottom of the iBoot.
7. Connect the outgoing power cable to the top of the iBoot.
8. Plug the devices into the iBoot.

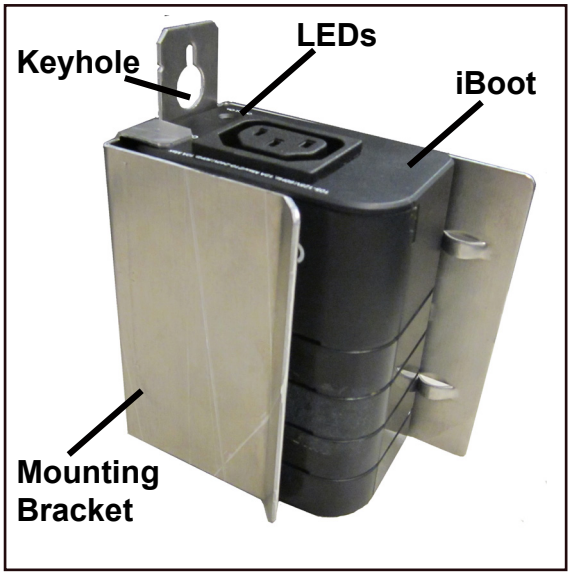


***Figure 5:*** *iBoot in Mounting Bracket*

## iBoot Configuration

### *Initial Configuration*

The Device Management Utility (DMU), available online at http://dataprobe.com/support/iboot.html, provides the easiest means to find and configure your iBoot-G2+ for use. It can discover all the iBoots on your network, display the current IP address of each, and allow setting of any valid IP address.

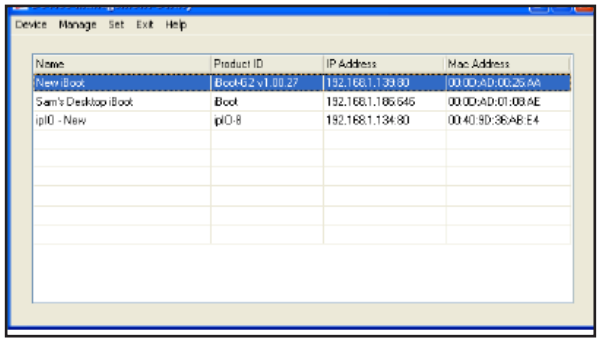


***Figure 6:*** *DMU Discovery*

#### Install and Run the DMU

1. Download DMUSetup.exe. from http://dataprobe.com/support/iboot.html.
2. Run the DMUSetup.exe. and follow the on screen instructions.
3. Run the DMU.

**Note:** The IP address can only be set within the first two minutes of powering up the iBoot. The Setup Utility will only work with iBoots on the same local subnets as the PC.

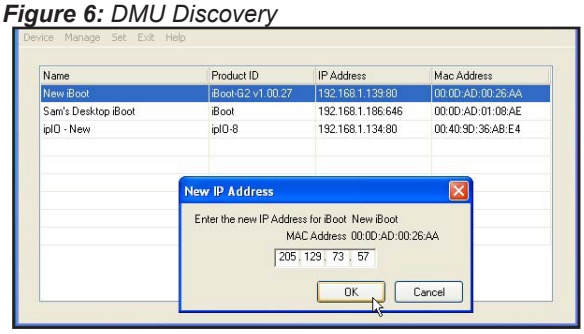


***Figure 7:*** *Enter New IP Address*


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

Once the DMU is run, click on Device | Discover to display all the iBoots on your network. The DMU will display the location name of the iBoot, the product ID and version number, the current IP Address, and the MAC Address. Factory defaulted iBoots will display with the name New iBoot-G2+ and have either the factory default IP address or an IP address that was automatically assigned by the DHCP server on your network.

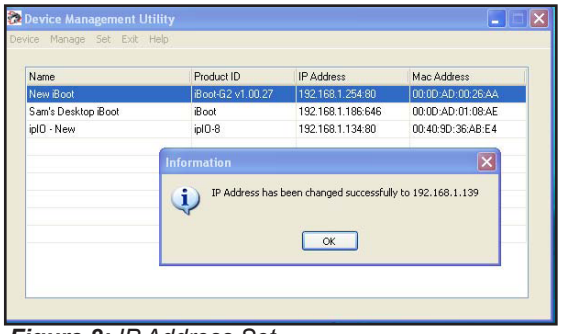


***Figure 8:** IP Address Set*

**Note:** It is preconfigured as 192.168.0.XXX.

The IP address field also indicates the port for the web access that is used by the iBoot. The standard port for web browser control is factory default Port 80.

## Change the IP Address

1. Click on the row containing the iBoot-G2+ to be set. The row will become highlighted.
2. From the menu select SET | IP Address.
3. Enter the new IP Address into the form. Click OK when done.
4. A confirmation box is displayed. Click OK to clear the box.

Once the IP Address is set, other all other operation features of the iBoot-G2+ can be set up. Click on Discover again to refresh the display, highlight the desired iBoot-G2+ and click on Manage | Launch Browser.

The DMU can also be used to return an iBoot-G2+ to its Factory Default Condition (this is different than Daktronics default). This can be used to recover an iBoot-G2 with a lost password. Highlight an iBoot-G2+ from the display and select Set | Factory Defaults. This must also be done within the first two minutes of powering up the iBoot.

## Setting the IP Address from a DHCP Server

A DHCP server will automatically assign an IP address (dynamic address) as well as Subnet Mask and Gateway to the iBoot. If you reboot the iBoot-G2+ with the IP Mode set for DHCP, the DHCP server will be able to assign an IP address. Once an IP address is assigned, you must check the DHCP server or use the iBoot-G2+ Setup Utility to see what address is assigned to the iBoot. You can lock the iBoot-G2+ to the current address, by selecting UP Mode = Static without changing the addresses. Set the IP Mode either by using the web setup page, or via Telnet commands.

If you set the IP address using another method, the address becomes static. To return iBoot-G2+ to dynamic addressing using DHCP, select DHCP mode in Network Setup and reboot the unit.

## Setting the IP Address Using Web Browser

To set the IP address using a Web Browser, connect the Ethernet connection to your local network and apply power to the iBoot.

Open your browser and access iBoot-G2+ by entering the default or current IP address into your browser's Address window. Enter the administrator credentials, click on Setup.


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## Web Browser Operation

### *Password Protection*

iBoot-G2+ uses two username/password credential sets, one for normal power control (User) and one that also provides access to the setup functions (Admin).


***Figure 9:*** *Connection*

Daktronics Default Credentials:

| Role | Username (fixed) | Password (user set) |
|---|---|---|
| Administrator | admin | admin |
| User | user | user |

Open you browser and enter the IP address of iBoot-G2+ into the address bar. If you have changed the IP address by any of the methods described, enter the address, otherwise, use the default IP address.

**Note:** For security purposes, change the default password.

Enter the username and password as prompted. When the proper username/password is received the Control and Status Page is displayed.

iBoot-G2+ uses an inactivity timer for security. This timeout is user selectable from 0 to 99 minutes. Setting to zero disables the timeout feature. When there is no activity for the set time in minutes, the user is automatically logged out and the username and password will need to be entered again for access. This is to prevent accidental lockout by leaving the user logged in.

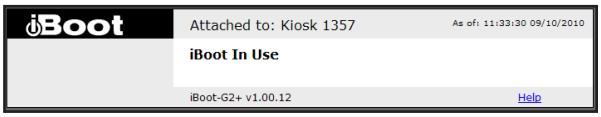


***Figure 10:*** *iBoot Status*

**Note:** As the iBoot-G2+ allows only one Web user logged in at any time, use caution when disabling the timeout feature, as it is possible to lock out other users by forgetting to logout. Closing the browser will not log the user out and will lock out web access. If you do become locked out, access the iBoot-G2+ via Telnet and reboot the unit, or press the reset button.

### *Control and Status Page*

Once the user is validated, the Control and Status is displayed. (Only one person can be connected to the iBoot-G2+ at a time).

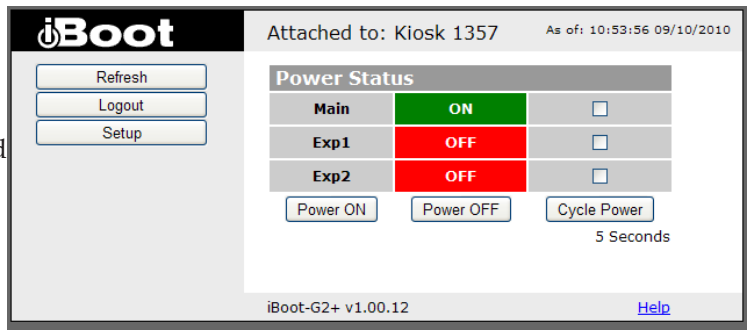


***Figure 11:*** *iBoot Status Example*


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

The look of the Control and Status page will be determined by which options are selected for the Expansion, AutoPing and Heartbeat.

### Expansion Set for iBoot-Exp Mode

The Control and Status page will show the On or Off status of each of the three manageable outlets, Main, Exp1 and Exp2.

To control the power, select the desired outlets and click on the appropriate button. If an outlet is linked to the Main outlet, an L will replace the checkbox.

To control the power, select the desired outlets and click on the appropriate button. If an outlet is linked to the Main outlet, an L will replace the checkbox and it will be managed in sync with the main outlet.

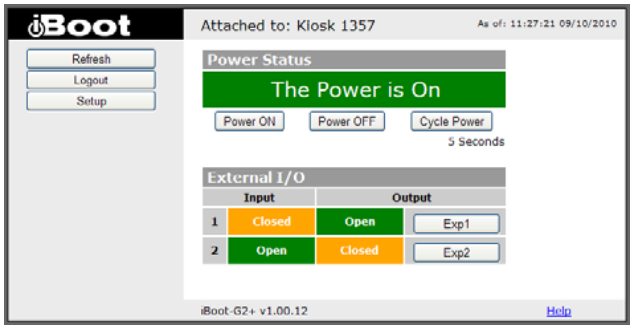


***Figure 12:*** *Power is On*

During power cycling, the Power Status bar will indicate the temporary status, with a blue background. Once the cycle is complete, the status bar will revert to its original condition. To abort a power cycle, select the desired outlet and click on either Power On or Power Off buttons. iBoot-G2+ will assume the status is selected.

The Control and Status page will display the Main Outlet, with power and control buttons underneath. The status of Exp1 and Exp2 Inputs and Outlets are displayed beneath the Main Power. To control the power, or to change the status of Exp1 or Exp2, select the appropriate button.

### AutoPing Enabled

If the AutoPing features is in use, the page will also display the current status, OK or Failed, for each AutoPing used, with a counter showing how many times the Action was triggered. If connecting with the Admin credentials, reset buttons for the Trigger counters are provided.

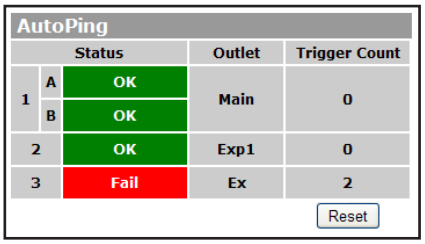


***Figure 13:*** *AutoPing Enabled*

### Navigation Buttons

| Button | Function |
|---|---|
| Refresh | Use the Refresh button to obtain the latest status of iBoot. Using your browser's refresh button can lead to inadvertent power switching. If an NTP server is being used, the time of the last refresh will be shown in the upper right corner. |
| Setup | To access the Setup page, the administrator credentials must be used for the initial login. |
| Logout | When you are finished with iBoot, click on Logout. A confirmation page will be displayed. If another user is logged into the iBoot-G2, an In Use page will be displayed. |


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## Web Setup

iBoot-G2+ setup section consists of several pages. Access any page via the buttons on the left of the page. Each time a setting is changed, click on the Save button for that page to save the changes before moving to the next page.

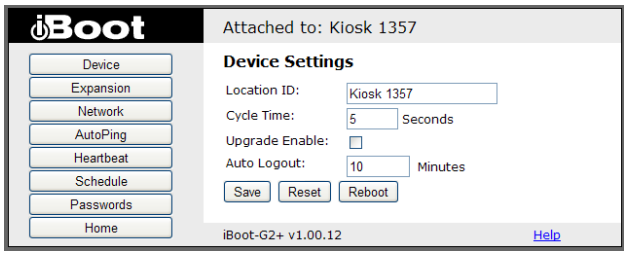


***Figure 14:*** *Location ID*

### *Device Settings*

#### Location ID

Set a 20 Character name to be displayed on the top of the Home page. This assists in identifying which iBoot-G2+ is being accessed.

#### Cycle Time

Daktronics default cycle time is 300 seconds but can be adjusted from 0 to 999 seconds power cycle time. This is the length of time the power will be off during a reboot, or on during a power burst.

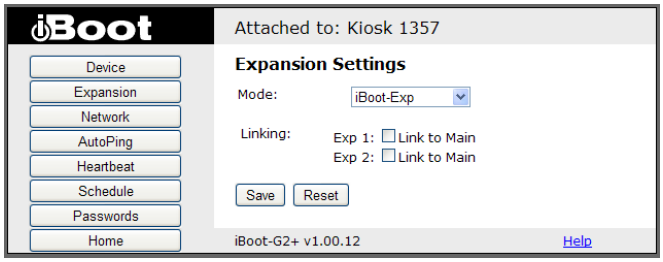


***Figure 15:*** *Expansion Settings*

#### Auto Logout

This setting sets the automatic logout for inactivity on both the web and the Telnet users. It can be set from 0 to 99 minutes. 0 disables the Auto Logout feature.

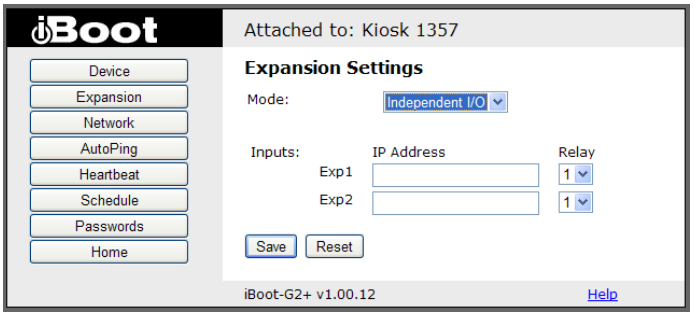


***Figure 16:*** *Independent I/O*

> **Note:** As the iBoot-G2+ allows only one Web user logged in at any time, use caution when disabling the timeout feature, as it is possible to lock out other users by forgetting to logout. Closing the browser will not log the user out and will lock out web access. If you do become locked out, access the iBoot-G2+ via Telnet and reboot the unit, or press the reset button.

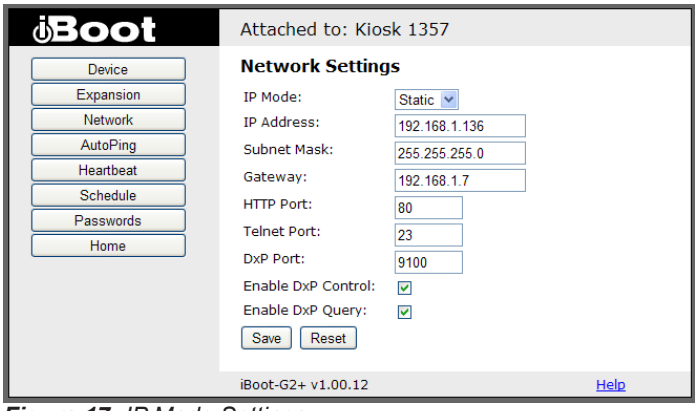


***Figure 17:*** *IP Mode Settings*

### *Expansion Settings*

#### Mode

Set iBoot-Exp. iBoot-Exp displays Exp1 and Exp2 as power On/Off modules.

- iBoot-Exp Mode: Select Link to Main to have the status of the Expansion unit be identical to the Main outlet of iBoot-G2+. This is convenient if switching both power supplies of dual redundant powered devices.


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

## *Network Settings*

### IP Mode
Select Static to set the IP address using the fields below, or DHCP to allow a DHCP server to set the IP Address. Daktronics will use static.

### IP Address
Enter a static IP address.

### Subnet Mask
Enter the Gateway.

### HTTP Port
This setting is used to allow access to iBoot-G2+ on a port other than the Web standard Port 80. If the port is changed, you will need to identify the port number when you enter iBoot's IP address into your browser. If the new port is 9105 then add :9105 to the end of the IP address.

### Telnet Port
This setting is used to allow access to the iBoot-G2+ via Telnet by ports other than standard 23.

> **Note:** All of the TCP/IP Settings require a reboot of the iBoot-G2, after clicking Save. A Reboot button will appear at the bottom of the page. The new settings will not take effect until the unit is rebooted. Reboot will not affect the power position of the iBoot-G2. Upon Clicking Reboot, the Goodbye page is displayed with a link to re-login.

### *AutoPing*
The AutoPing feature allows iBoot-G2+ to automatically detect failed equipment and perform a timed reboot or other power control function (like turning on an indicator or siren. You set up to four IP addresses to be periodically pinged. When iBoot-G2+ no longer detects a response from these addresses, the programmed power control function is actuated.

The two addresses can be AND or OR linked so that both (AND) or either (OR) need to fail in order to take the selected action.

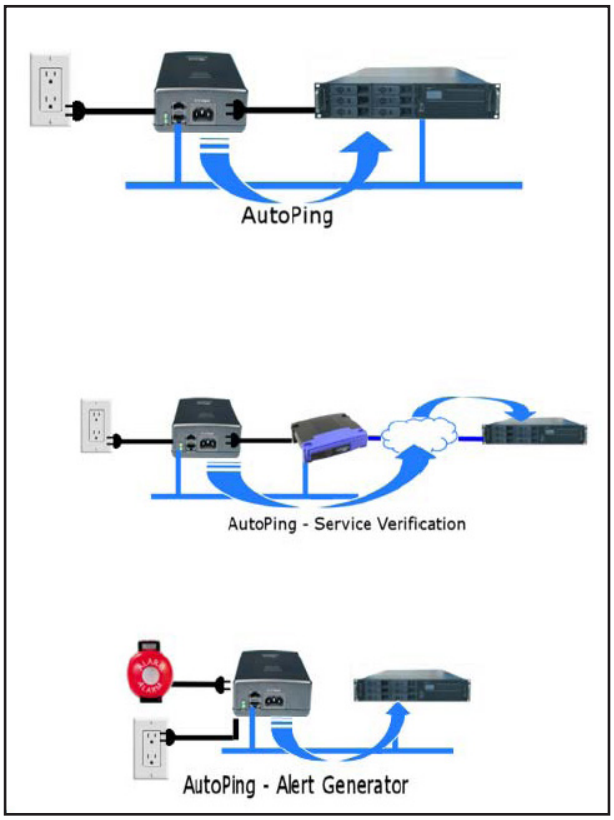


***Figure 18:*** *AutoPing Configurations*


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# Installing and Configuring a DataProbe iBoot G2 for Street Furniture

### Examples:

Use AutoPing as server monitor: iBoot-G2+ is installed with the device it monitors and automatically reboots if there is no response. For street furniture, the player is a VIP.

Use Auto-Ping as service monitor: iBoot-G2+ is installed with the device to be rebooted, but pings a remote host to test the communication channel. Ideal for: DSL 7 Cable Modem Verification.

iBoot-G2+ supports three independent AutoPing channels, each controlling either the Main power, or either of the two Expansion ports. The first AutoPing channel can be programmed with two separate IP Addresses with logical AND / OR comparison to determine the final action.

## *AutoPing Settings*

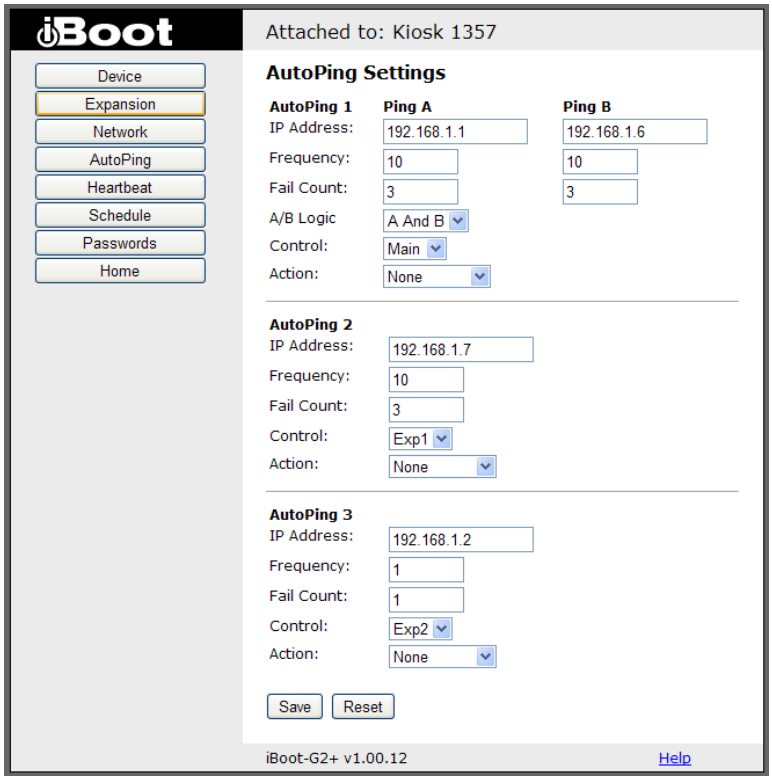


***Figure 19:*** *AutoPing Settings*

### IP Address

Enter the IP address of the device to be pinged.

### Ping Frequency

The Daktronics default is 300 seconds but can range from 1 to 999 seconds. The ping will go out to the selected device this often.

### Fail Count

The Daktronics default setting is eight times but can range from 1-999 times the ping needs to fail consecutively before the selected action is taken. When the fail count has been reached, the AutoPing action will be triggered.

### A/B Logic

(AutoPing 1 only) Select from A Only, A AND B, A OR B. With and, both AutoPings need to exceed their fail count to trigger the Action. With OR, the Action will be triggered if either AutoPing fails.

### Control

Select Main for the inter power outlet, or Exp1, Exp2 for either of the two expansion ports.


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### Action

Select From:

| Selection | Action |
|---|---|
| None | AutoPing not used |
| Power On - Latch | Upon triggering, iBoot-G2+ will power on and remain so until changed vial the web, Telnet, DxP, etc. |
| Power On - Follow | Upon triggering, iBoot-G2+ will power on. When the ping response returns, iBoot-G2+ will power off. |
| Power Off - Latch | Upon triggering, iBoot-G2+ will power off and remain so until changed via the web, Telnet, DxP, etc. |
| Power Off - Follow | Upon triggering, iBoot-G2+ will power off. When the ping response returns, iBoot-G2+ will power on. |
| Power Cycle | Upon triggering, iBoot-G2+ will cycle the power. IBoot-G2+ will wait the Ping Frequency x Fail Count: if the response does not return, the power will be recycled again. This will continue until the ping response returns or Auto Ping is turned off. Make sure your Auto Ping frequency is longer than the time required to reboot your device. |
| Power Cycle Once | Upon triggering, iBoot-G2+ will cycle power one time. It will not cycle again automatically until the ping response returns and is lost again. |

With AutoPing operational, the main iBoot-G2+page will display the current status of this feature. The status will be OK to indicate that iBoot-G2+ is receiving responses to the ping, or that the fail counter has not been exceeded.

If the count failure has been exceeded, the status will change to FAIL. The Fail Counter will indicate the number of times the failure has occurred, and the Trigger Counter indicates the number of times the AutoPing action has been triggered. A counter reset button is provided when logging in with the Admin password.

> **Note:** All of the AutoPing Settings require a reboot of the iBoot-G2+, after clicking Save. A Reboot button will appear at the bottom of the page. The new settings will not take effect until the unit is rebooted. Reboot will not affect the power position of the iBoot-G2+. Upon Clicking Reboot, the Goodbye page is displayed with a link to re-login.

### *Passwords*

Two passwords are used by iBoot. The User Password allows access to the control of the iBoot, but not to the Setup function. When this password is used, the main screen will not have a link to Setup. The Administrator Password allows access to both the Main Screen and the Setup

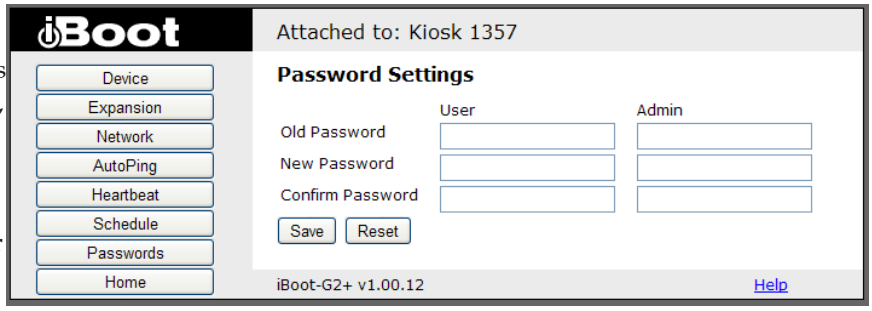


***Figure 20:*** *Password Settings*


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Screen. Passwords can be up to 20 characters long and are case sensitive.

Enter the current password then the new password twice to confirm.

### Daktronics Default Credentials

| Role | Username (fixed) | Password (user set) |
|---|---|---|
| Administrator | admin | admin |
| User | user | user |

## Troubleshooting

The iBoot-G2+ has a recesses pushbutton switch in the event the unit is not performing as expected. Use the pushbutton as follows:

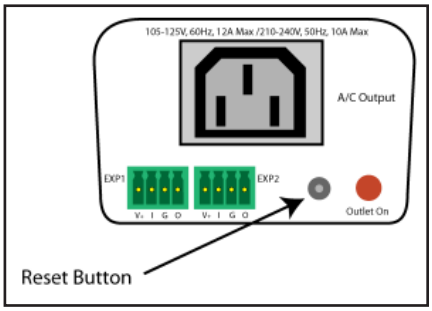


***Figure 21:*** *iBoot Reset Button*

| Action | Result |
|---|---|
| Momentary | Soft Reset. Will not change outlet status. |
| 5 Seconds push | Reset to Factory Defaults. Hold the button in until the Outlet LED is blinking, then release. |
| Hold in while and Power up the iBoot | Recovery Mode. Allows upload of new firmware to Factory default IP Address |


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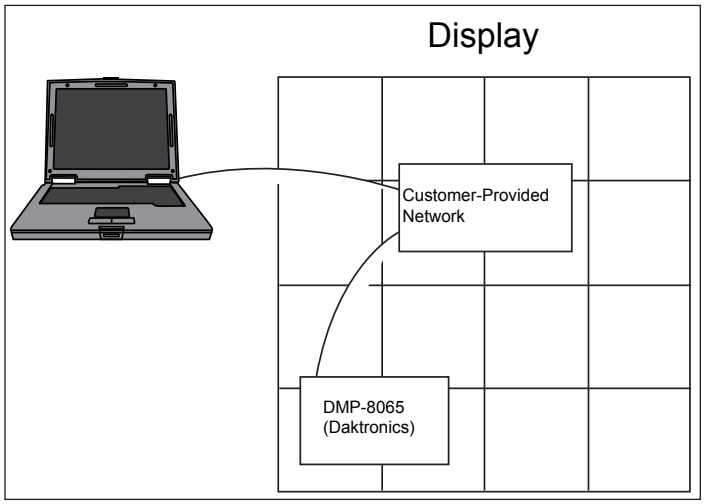
The DMP-8065 is a PC and video processor combination that receives content from Daktronics' control systems and sends it to the display. The DMP-8065 also controls dimming, displays test patterns, and adjusts gamma and color controls. This quick guide assists your set up of a DMP-8065.

## Connect to the Network

- Connect the Ethernet cable inside the display cabinet to your network to establish communication with the DMP-8065
- The DMP-8065 comes configured for DHCP
- Check your display-specific manual for deviations




## Connect to the DMP-8065

- To operate the system, another PC is needed
- Connect all devices to the same network and power them up

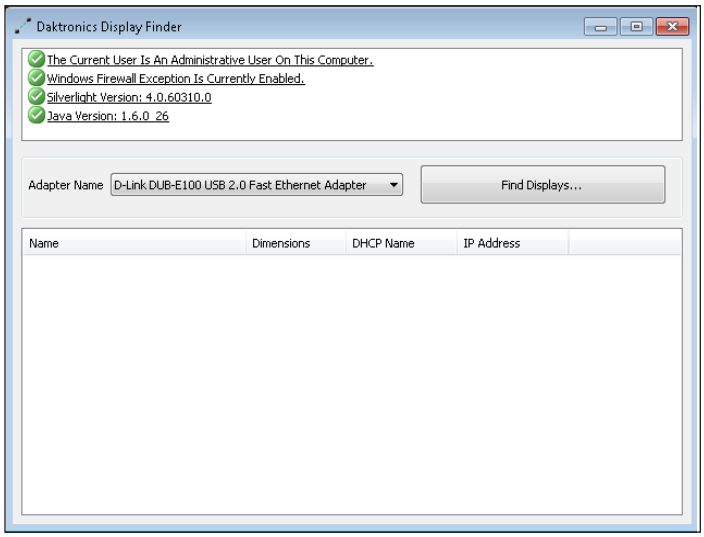
Now that the DMP-8065 is connected to the network, it is available for use with Venus® 1500 software or Visiconn® display management. Reference the Venus® 1500 software or Visiconn® display management setup documentation for more information.

The following steps may be required for further configuration and backup as needed.

## Find the DMP-8065

An Internet connection is required for this operation.

1. Type **http://dakfiles.daktronics.com/downloads/venus1500/utils/DisplayFind/** into the address bar of your browser.
2. Click **DisplayFind.exe** to download application. Then click **Run** or **Save**.
3. Start application.
4. Click **Find Display**.
5. Click your controller's name. It will be in the format of DMP8-xx-xxxx.
   **Note:** If multiple displays are found, use the IP address or name to confirm the identity of your chosen display. The IP address is shown on the display during start up.




### *Silverlight® Install*

If Silverlight® is not installed, a notification opens.

1. Click the **Silverlight** is not installed notification
2. Follow the instructions on the page



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### *Java® Installation*

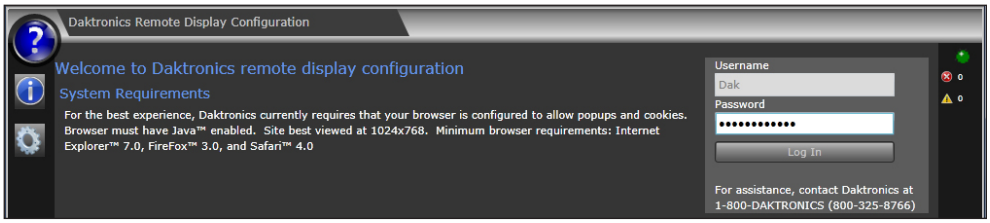
If Java® is not installed, a notification opens.


Click the Java® web address and follow the prompts to complete installation.

### *Enabling JavaScript® and Java®*

JavaScript® must be enabled on the computer to use the DMP-8065 User Interface. When you attempt to access the DMP-8065 application without JavaScript® enabled, DMP-8065 prompts you to enable it, or it may ask you to install Silverlight® when it has already been installed.

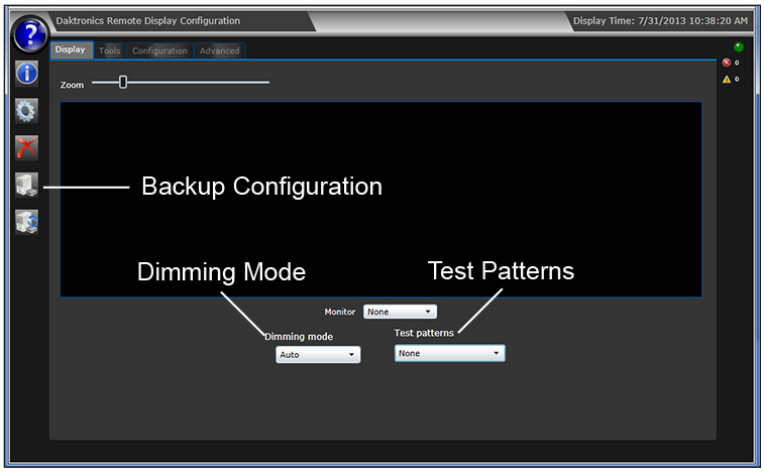
## Connect to DMP-8065 for the First Time




1. Type **DakPassword!** (Factory Default) in the **Password** text box
   **Note:**
   - Daktronics recommends you change the password after initial configuration.
   - Do not lose the password. **Losing it requires a service call.**
2. Click **OK**

## System Configuration Display Adjustments

To adjust dimming, navigate to the **Display** tab. Click the **Dimming mode** drop-down list and select **Manual** or **Auto**.




- **Manual** — set dimming values via slider bar
- **Auto** — adjust dimming values according to data received from the display's light sensor.

Control color adjustments, video input source information and backup content on the **Display Control** tab. See the DMP-8065 help file for more information.

## Backup Configuration

Following a successful login and configuration to match the required site needs, find the **Backup Display Configuration** control in the left column area. This control clones the configuration of the DMP-8065.

1. Click the **Backup Display Configuration** button to open the **Save** window.
2. Choose the location to save your file.
3. Type the name of the file to be saved in the **File Name** text box.



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4. Select a storage type for the file from the **Files of Type** drop-down box.
5. Click **Save**.
   **Note:**
   - Retain this information in a safe place.
   - Use this information to restore configuration to a replacement if needed.

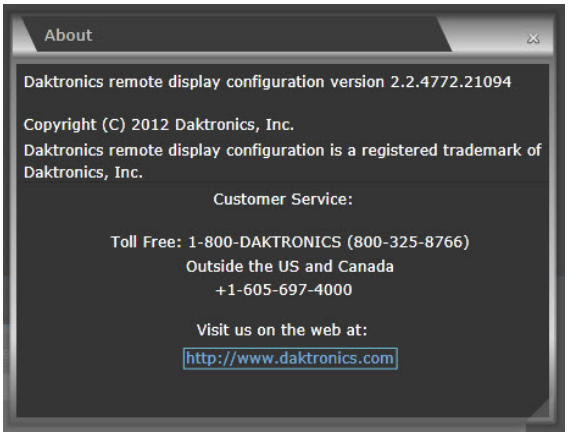
## Connect to VIP-5060 for the First Time

It is necessary to connect to the VIP-5060 for certain operations, like Backup Configuration.

1. Type **Dak** in the **Username** text box
2. Type **DakPassword!** (Factory Default) in the **Password** text box
   **Note:**
   - Daktronics recommends you change the password after initial configuration.
   - Do not lose the password. **Losing it requires a service call.**
3. Click **OK**
4. Follow the steps in the preceding section to Backup Configuration on the VIP-5060

## Contact Information and Where to Get Help

Access the DMP-8065 Operator's Manual via the blue question mark button in the top-left corner of the screen. If you require further assistance, Daktronics Customer Service is also available 24/7 via phone or online connection.




### *Telephone*

Toll Free: 1-800-DAKTRONICS (800-325-8766)

Outside the US and Canada: +1-605-697-4000

### *Online*

http://www.daktronics.com



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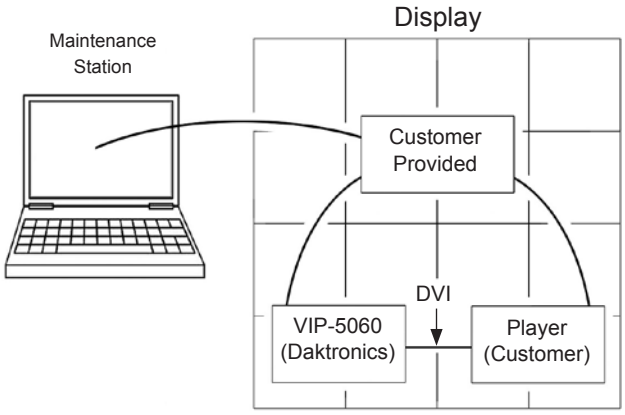
# Quick Guide VIP-5060 (Video Input Processor) 1 of 2

The VIP-5060 is the interface to drive video to your display while meeting operational needs such as dimming, displaying test patterns, and adjusting gamma and color controls. This quick start guide will assist you in setting up your VIP-5060.

## Before You Start:




### *DVI Input*

- Max input resolution of 1280 x 720.
- Refresh rate of 60Hz
- Playback window at 0,0(upper left) of DVI Input
- Playback window matches display size in pixels.

### *Network*

- The VIP-5060 comes default configured for DHCP.
- Check your display specific manual for deviations.

## Connecting to the Player

### *Connecting DVI Video*

1. Insert male plug into female jack. Located on the bottom of the VIP-5060 inside the display
2. Tighten screws on male plug by turning them clockwise until snug.

## Connecting to the Network

### *Connecting to the Network*

1. Insert the sealed RJ45 network cable to the Ethernet port on the VIP-5060
2. Push and turn the threaded end a ¼ turn.
3. Connect the other end to the customer provided network.

## Connecting to the VIP-5060

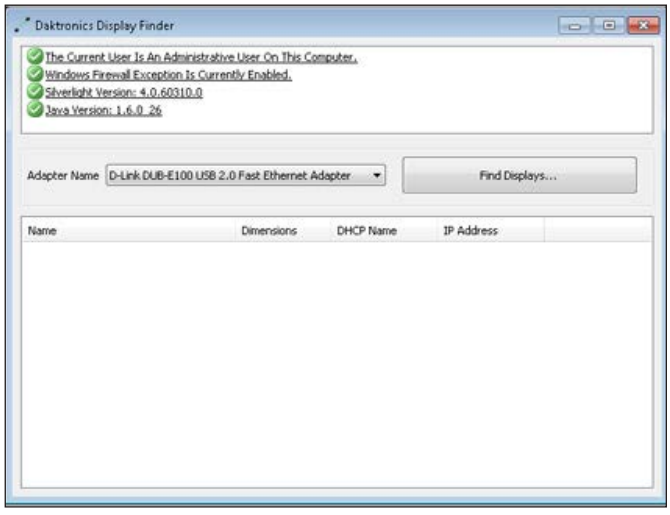
- To operate the system another PC is needed.
- All devices need to be connected to the same network and powered up.

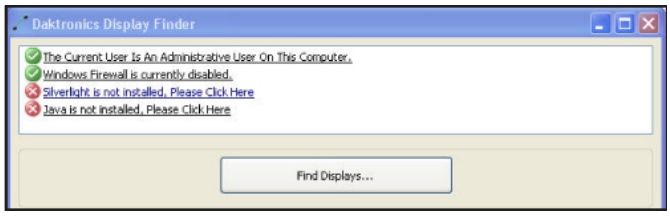
### *Finding the VIP-5060*

An Internet connection is required for this operation.

1. Enter **http://dakfiles.daktronics.com/downloads/venus1500/utils/DisplayFind/** into the address bar of your browser
2. Click **DisplayFind.exe** to download application. Then click **Run** or **Save**.
3. Start application
4. Click **Find Display**
5. Click your controller's name. It will be in the format of VIP5-xx-xxxx

   **Note:** If multiple displays are found, use the IP address or name to confirm the identity of your chosen display. The IP address will be shown on the display during startup.

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# Quick Guide VIP-5060 (Video Input Processor) 2 of 2

### *Silverlight® Install*


If you do not have Silverlight installed, a notification will appear.

1. Click **Silverlight** is not installed notification
2. Follow instructions on page

### *Connecting the First Time*


1. Enter **Dak** into the Username text box
2. Enter **DakPassword!**(Factory Default) into the **Password** text box
3. Click **OK**

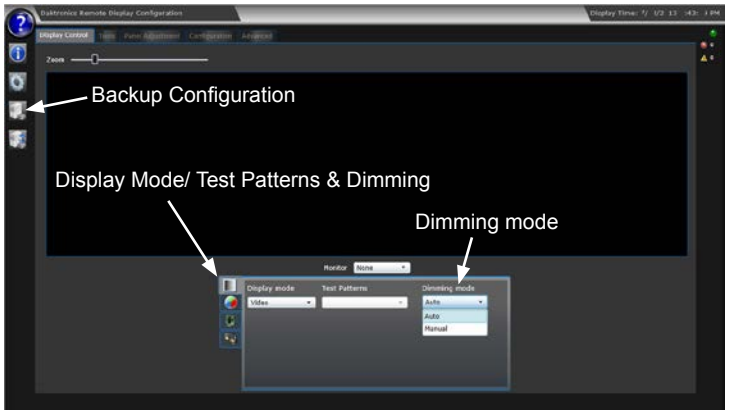
Change the password after initial configuration.

**Note:** Do not lose the password. **Losing it requires a service call.**

## System Configuration Display Adjustments

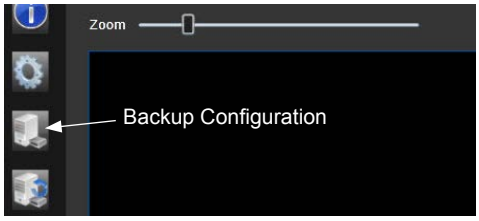
To adjust dimming, navigate to the **Display Mode/ Test Patterns & Dimming** sub-tab, then click the **Dimming mode** drop-down list and select from the following:

- *Manual* — user sets dimming values via slider bar
- *Auto* — dimming values adjust in accordance to data received from the display's light sensor
- *Color Adjustments* — video input source information and backup content can also be configured from the Display Control tab. More information is available in the help file.




## Backing Up Configuration

Following a successful login and configuration to match the required site needs, the **Backup Display Configuration** control is found in the left column area. This control clones the configuration of the VIP.



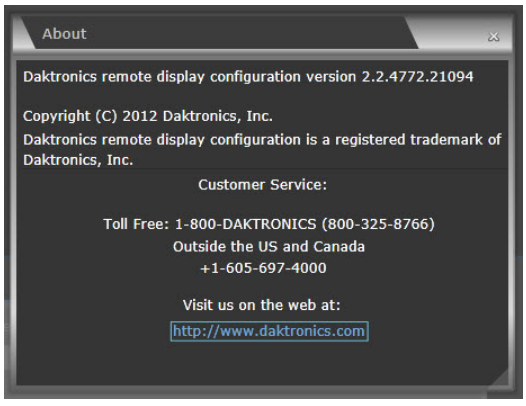

1. Click the **Backup Display Configuration** button to open **Save** window
2. Choose the location to save your file
3. Enter the name of the file to be saved into the **File Name** text box
4. Select storage type for the file from the **Files of Type** drop-down box
5. When finished, click **Save**

**Note:**

- Retain this information in a safe place.
- Use this information to restore configuration to a replacement if needed.

## Contact Info and Where to Get Help

Access the VIP-5060 Operator's Manual via the blue question mark button in the top-left corner of the screen. If you require further assistance, Daktronics Customer Service is also available 24/7 via phone or online connection.




### *Telephone*

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Outside the US and Canada: +1-605-697-4000

### *Online*

http://www.daktronics.com

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www.daktronics.com e-mail sales@daktronics.com


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## Lifting

1. Lift the shipping frame by the lift points. Refer to **Figure 1**.

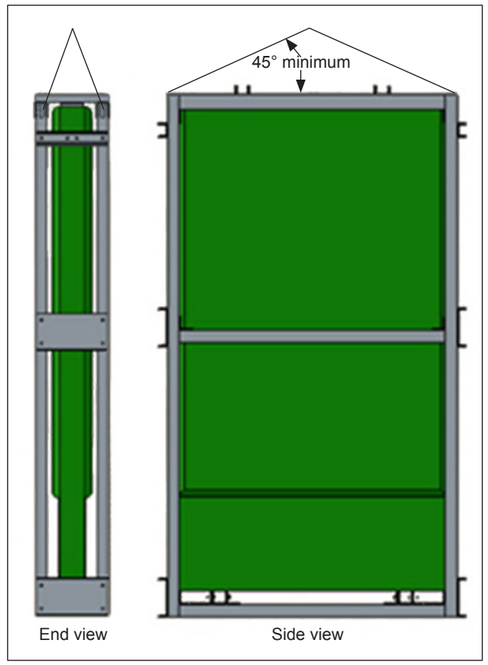


***Figure 1:*** *Lifting Shipping Frame*

2. Lift at an angle of 45° or greater. Always lift by the lift points in the tubes and not by the display section. Refer to **Figure 2** and **Figure 3**.

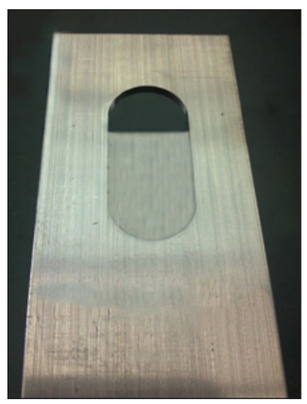

***Figure 2:*** *Lift Point in Tube*

***Figure 3:*** *Lift Point on Display Section*

## Disassembling

1. Remove the shrink wrap carefully.

2. Unbolt and remove the top support assembly. Refer to **Figure 4**.

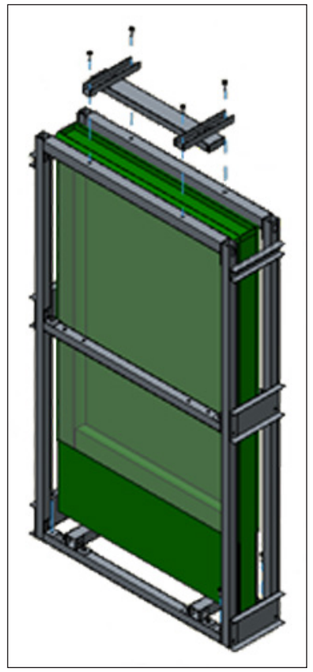

***Figure 4:*** *Removing Top Support Assembly*

3. Unbolt the side panel assemblies from the base assembly at two locations front and rear. Refer to **Figure 5**.

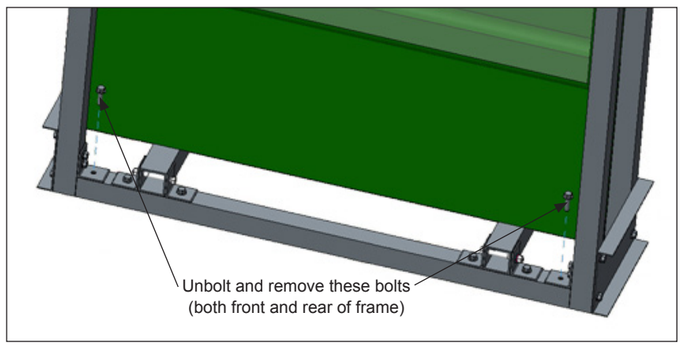


***Figure 5:*** *Unbolting Side Panel Assemblies*

4. Remove the bolts carefully, ensuring the side panels do not touch the display section. Refer to **Figure 6**.

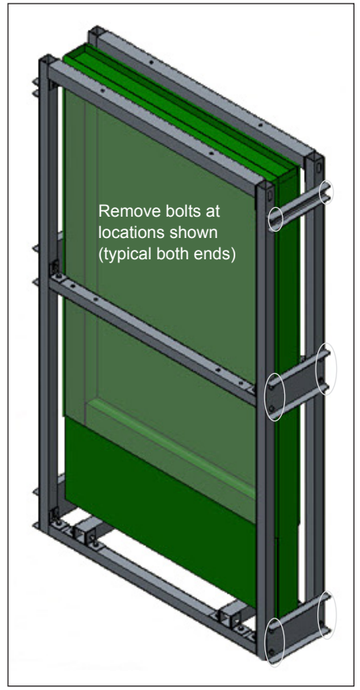


***Figure 6:*** *Removing Side Panel*

5. Attach the display section to the crane/lift. Use the special 5.5mm tool to open the front glass door and to remove the bottom base shrouding. Refer to **Figure 7** and **Figure 8**. Unbolt the four bolts securing the display section to the frame base.


***Figure 7:*** *Opening Door*

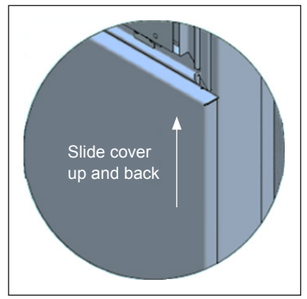


***Figure 8:*** *Removing Shrouding*

The display section is ready to be installed onto the pre-designed concrete footing.



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# Appendix C: Daktronics Warranty & Limitation of Liability

**This section includes the Daktronics Warranty & Limitation of Liability statement.**

# 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 as defined in the Standard Terms and Conditions of Service.

"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 to Purchaser's reasonable satisfaction and 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 FINTESS 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 EXCEPT TO AN AFFILIATE CONTROLLED BY PURCHASER.

**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 or is caused by Daktronics negligence or misconduct. 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, or (iii) improper air conditioning or humidity control;

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 or an affiliate controlled by Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

**5. Governing Law**

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 Illinois 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.

**6. 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.