

**GalaxyPro[®] Revolution
Series Single Section Display**

Installation & Operation Manual

DD1359021

Rev 15 – 6 September 2012

DAKTRONICS

Fill in the chart with specific information about this display so these details will be readily available when calling for service or replacement parts.

Information needed	Fill in the blank
Location address of the display:	
Model number of the display:	GPR
Version of software being used:	Venus 1500 v. _____
Method of communication being used: (See Section 4 for guidance)	
Controller version used in the display:	M4 controller
Firmware Version	M4-GalaxyProRev _._._
	Rfs _._._



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Section 1: Overview of the Displays

Daktronics GalaxyPro® Revolution displays can show a wide variety of presentations with great color depth. **Figure 2** shows the front and back views of a typical display. **Figure 3** shows a simplified diagram of basic display setup.

1.1 Display Details

GalaxyPro® Revolution model numbers are defined as follows:

GPR-RxC-M-L-F		
GPR	=	Outdoor GalaxyPro® Revolution display
R	=	Number of pixel rows high
C	=	Number of pixel columns long
M	=	Pixel pitch: 12EV – “12 Evolution” pixels, all others in millimeters
L	=	LED Color: R (Red), G (Green), B (blue)
F	=	Face setup: SF – Single Face or 2V – Primary/Mirror

The displays are either single-face (SF) or two view (2V) units. In 2V units, the first display is referred to as the primary and the second is called the mirror. If the second display is mounted more than 10 feet (3.05 m) from the primary display, two primary displays are used.

A module is the building block of the GalaxyPro® Revolution display. **Figure 1** shows a 20mm module measuring 16 pixels high by 16 pixels wide (other modules will vary). Individual modules can be easily removed from the display if needed.

A typical display system consists of a Windows®-based computer running Venus® 1500 software and one or more displays. Venus® 1500 is a software package that runs under Windows® XP or Vista Home/Professional operating systems on an IBM®-compatible computer. Refer to the Venus® 1500 Help file for operation of the Venus® 1500 software.

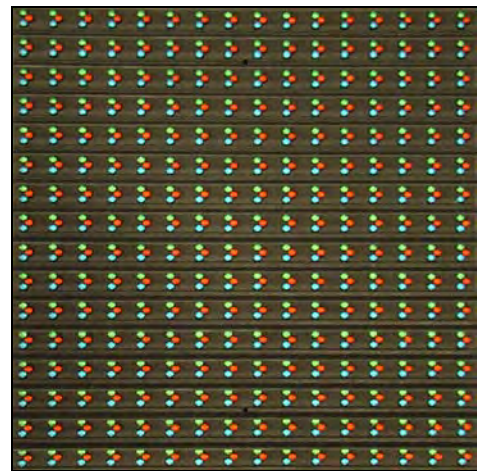


Figure 1: Single Module

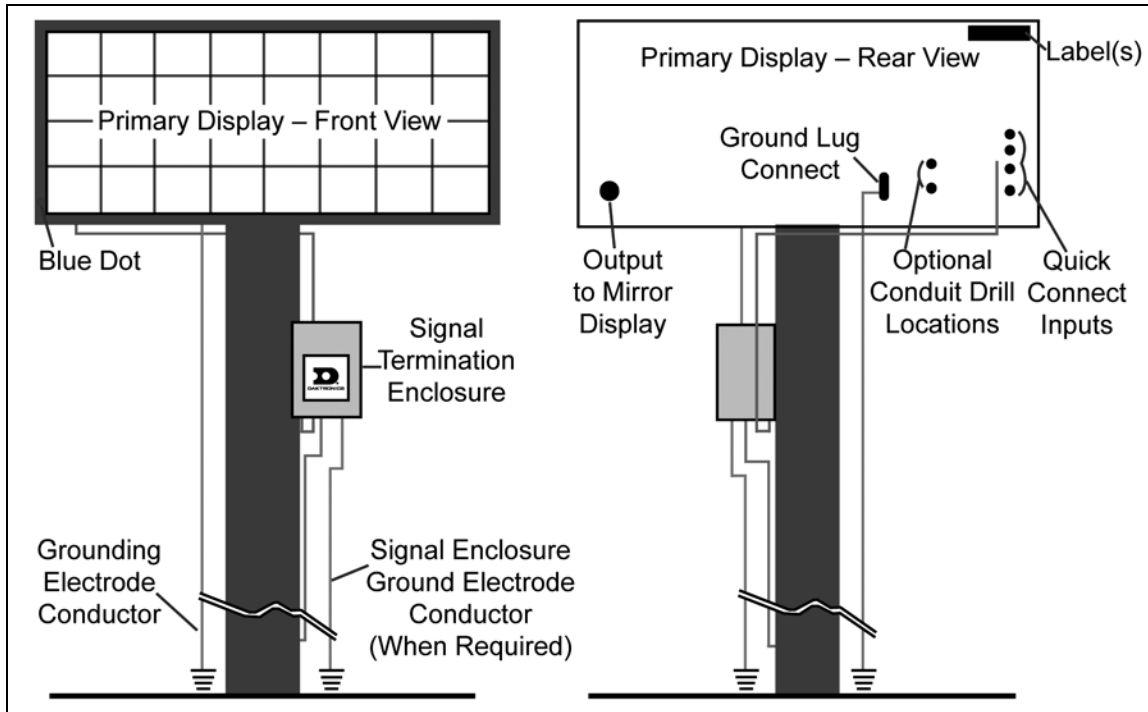


Figure 2: Display Components

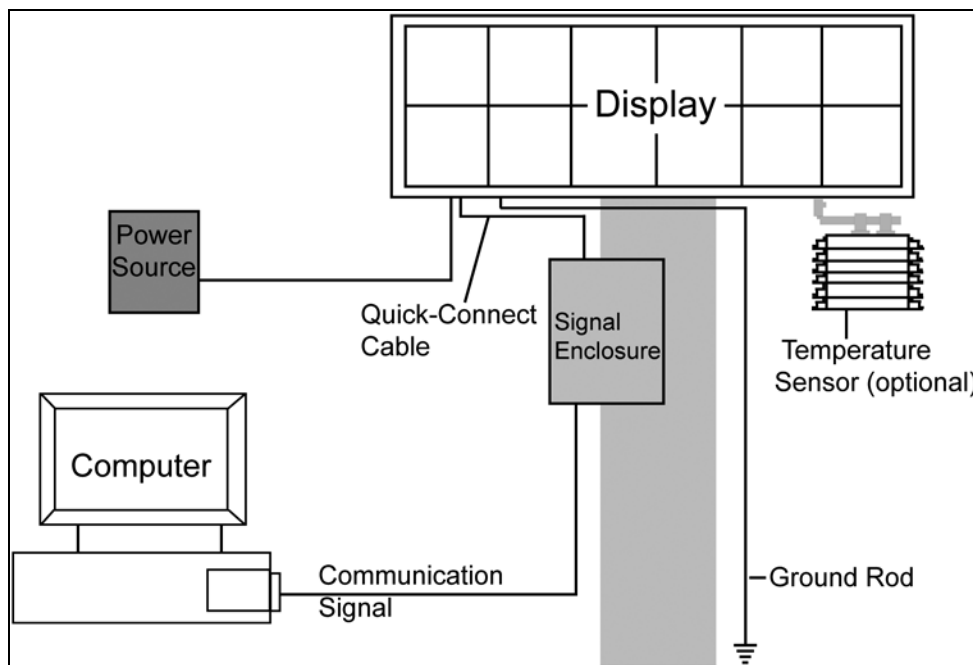


Figure 3: Basic Display Setup

Section 2: Mechanical Installation

Read the mechanical, power, and signal installation sections before installing the display(s).

Daktronics' engineering staff must approve any changes that may affect the weather-tightness of the display. Detailed drawings of the changes must be submitted to Daktronics for evaluation and approval, or the warranty may be void.

Daktronics is not responsible for installations or the structural integrity of support structures done by others. The customer must ensure a qualified structural engineer approves the structure and any additional hardware.

2.1 Pre-installation Checklist

Verify the following before installation:

- The display is in good condition after shipping and uncrating.
- A straight and square mounting frame is provided for the display.
- Height variation in any 4-ft. (1.2 m) horizontal section must not exceed $\frac{1}{4}$ " (6.3 mm).
- Adequate support is provided for the display so that the structure will not yield at any unsupported points after mounting.
- Leave 4 inches (10.2 cm) of unobstructed space above the display so the eyebolt can be removed.
No clearance is required once the eyebolt is removed.
- Maintain clearance around the display to allow unobstructed air flow through the vents and fans and to allow access to internal components.
- Assure the display cabinet has no holes (accidental or intentional) that could allow water to enter the display.
- Check that all display modules are fully latched into the display cabinet.

2.2 Support Structure Requirements

The installer must ensure the mounting structure and hardware can support the display, and that the structure follows all local and national structural codes. Support structure design depends on the mounting method, display size, and weight.

Because every installation site is unique, no single procedure is approved by Daktronics for mounting GalaxyPro® Revolution displays. This section contains general information that may or may not be appropriate for this particular installation. Refer to **Figure 2** and **Figure 3** for basic display setups.

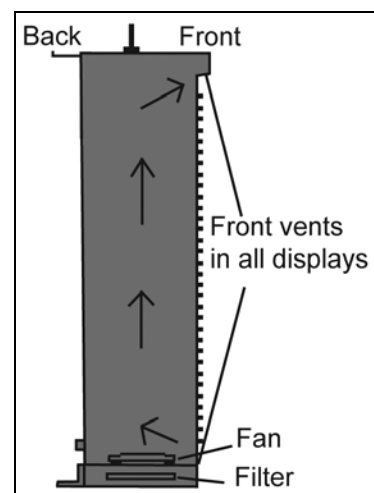


Figure 4: Display Ventilation

Also remember the location of mounting clips and the clearance needed for the power/signal terminations on the back of the display and ventilation system on the front of the display, as shown in **Figure 4** and **Figure 5**. Display height and wind loading are also critical factors to consider. Find this information on the **Shop Drawing** which was supplied with the order.

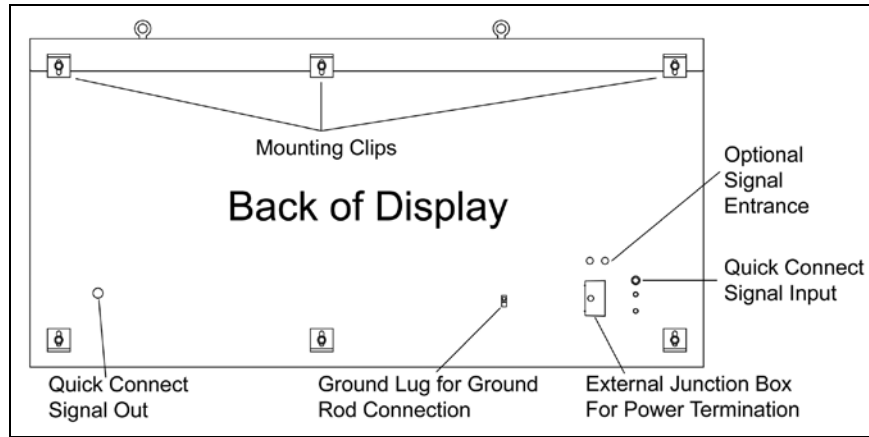


Figure 5: Back Section

2.3 Lifting a Display or Display Section

Maintain a 90-degree angle between the cabinet and lifting method to retain the cabinet's structural integrity.

If damage occurs due to improper lifting procedures, the warranty will be void.

General Lifting Notes:

Lift the display into position on the support structure using a lifting bar and all eyebolts, as shown in **Figure 6**.

Do not attempt to permanently support the display by the eyebolts.

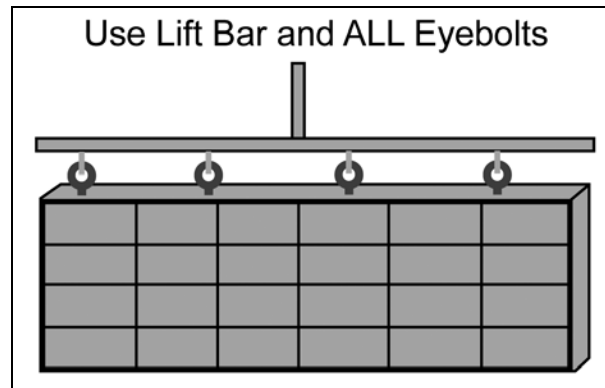


Figure 6: Lifting the Display

After installation is complete, carefully inspect the display for any holes that may allow water to seep into the display and seal them with silicone.

If the eyebolts on the top of the display were removed, plug the holes with bolts and the rubber-sealing washer that was removed with the eyebolt.

Refer to **Section 3** for power routing and to the appropriate communication manual for signal connections to the display.

2.4 Optional Temperature Sensor Mounting

If an optional temperature sensor is used with this display, refer to **Appendix B** for mounting and signal connections.

Section 3: Power Installation

Read the mechanical, power, and signal installation sections before installing the display(s).

Only a qualified individual should terminate power and signal cable at this Daktronics display.

All proposed changes must be approved by Daktronics engineering staff or the warranty will be null and void.

3.1 Conduit

Daktronics **does not** include the conduit. Separate conduit must be used to route:

- Power.
- Signal IN wires to the signal termination enclosure, when applicable.
- Signal OUT wires (if not using the provided interconnect cable).

Some displays have a J box on the back for power termination which has $\frac{3}{4}$ " (1.905 cm) threaded holes, while others have a $\frac{3}{4}$ " hole for conduit, and is capped with a rubber plug on the back for power entry. In this case, power is terminated to an internal power termination panel. Refer to the shop drawing to determine which type of display is being installed.

3.2 Overview of Power/ Signal Connection

Following is a brief summary of the power and signal connections to the display.

1. Possible methods for signal termination are shown in the manual for the specific communication type.
2. Power is routed to the display through a fused disconnect switch that can open all ungrounded power conductors. Install this disconnect within the line of sight of personnel performing maintenance on the display. (If the disconnect is located out of sight of the display, it must be capable of being locked in the open position.)
3. Route power conductors from the disconnect to the display through conduit according to local and national electrical codes.
4. Display power terminates either internally at the power termination panel or externally at the J box.
5. Connect the grounding electrode conductor at the grounding lug on the back of the display.
6. Route signal cable to the signal termination enclosure. When required, the signal enclosure must be grounded.
7. Route signal into the enclosure through $\frac{3}{4}$ " conduit. Use supplied hole that is capped with rubber plug.

8. Route the signal quick-connect cable from the enclosure to the display through conduit or through the display pole if power is not also routed in the display pole.

Daktronics strongly recommends the quick-connect cables be secured to protect them from weather or vandalism.

Displays are equipped with circuit breakers that carry a **UL489** or **UL1077 (IEC 60947, VDE 660)** rating. These devices only protect the components within the display. Suitable devices must be used for the equipment and feeders supplying power to the display.

3.3 Power Requirements

Do not connect the displays to any voltage other than that listed on the Daktronics product label.

Conductors of circuits delivering power to a Daktronics display must be sized according to local and national electrical codes so that the power distribution system can deliver full-load power to the display while maintaining a voltage within 5 percent of the utility nominal voltage.

Displays use single-phase power. Proper power installation is imperative for proper display operation. **Power Specifications** are found in **Appendix A**. The following sub-sections provide details of power installation.

Main Disconnect

Daktronics requires using a power disconnect switch with the display. Use a disconnect switch so that all ungrounded conductors can be disconnected near the point of power connection.

The disconnecting means must be either located in a direct line of sight from the display or capable of being locked in the open position. This ensures that power will not be reconnected while service personnel work on the display.

3.4 Grounding

Displays must be grounded according to the provisions outlined in all applicable local and national electrical codes.

Installation with Ground and Neutral Conductors Provided

These displays are installed with ground and neutral conductors provided. The power cable must contain an isolated earth-ground conductor.

Do not connect neutral to ground at the disconnect or at the display. This will violate electrical codes and render the warranty null and void.

The display system must be connected to earth ground as shown in **Figure 7**. Proper grounding protects the equipment from damaging electrical disturbances and lightning. Daktronics requires a resistance to ground of 10 ohms or less. The display must be properly grounded or the warranty will be null and void.

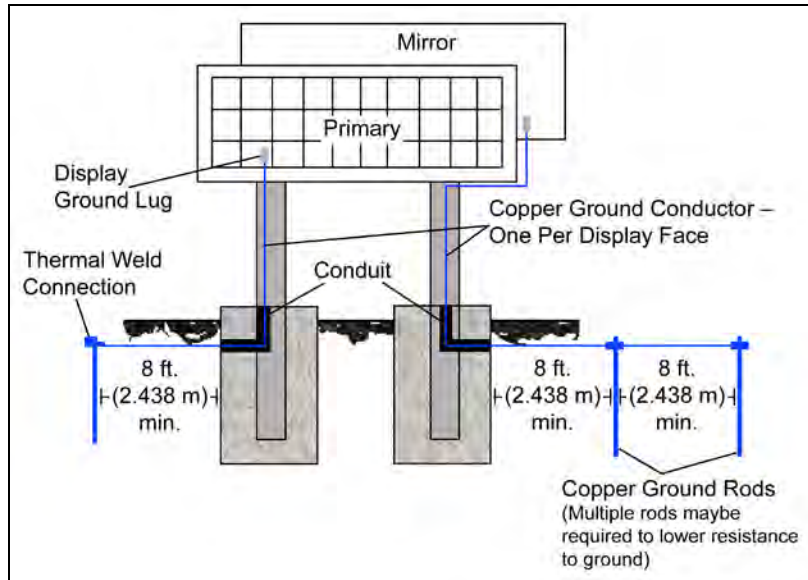


Figure 7: Correct Grounding

Important points about grounding:

- **Follow local and national codes:** The material of an earth-ground electrode differs from region to region and from conditions present at the site. Consult any electrical codes that apply.
- **Support structure cannot be used as an earth-ground electrode:** The support is generally embedded in concrete, and if embedded in earth, the steel is either primed or it corrodes, making it a poor ground.
- **One grounding electrode for each display face:** Grounding is connected between sections by bonding jumpers. Other grounding electrodes as described in national and local electrical codes may be used.
- **Resistance to ground 10 ohms or less:** This is required by Daktronics for proper display performance. If the resistance to ground is higher than 10 ohms, it is necessary to install additional grounding electrodes to reduce resistance. The grounding electrode must be installed within 25 feet (7.6 m) of the display's base and must be connected to the ground lug on the back of the display, as shown in **Figure 7**.

3.5 Power Connection

Power is terminated either internally to the power termination board or externally to the J box.

Terminating single-phase power to the internal power termination panel:

1. Open the display as explained in **Section 6.2** and locate the power termination panel.
2. Route the cable through conduit to the back of the display. Remove the rubber plug from the $\frac{3}{4}$ " (1.905 cm) hole for access, being careful not to damage internal components.
3. If larger conduit is required, remove metal filings from display after drilling.
4. Connect the neutral wire to the neutral lug and the live wires to Line 1 and Line 2. Refer to **Figure 8**.
5. The ground wire connects to the grounding bus bar.

Terminating hot, neutral, and ground wires at the J box

1. Route the power cable through $\frac{3}{4}$ " conduit to the rear of the display and into the power termination J box.
2. The power termination enclosure contains two or three wires plus a ground coming from the interior of the display. These wires are pre-terminated to the power termination panel inside the display.
3. Inside the external J box, shown in **Figure 9**, connect the power wires to the wires coming from the display interior using wire nuts.

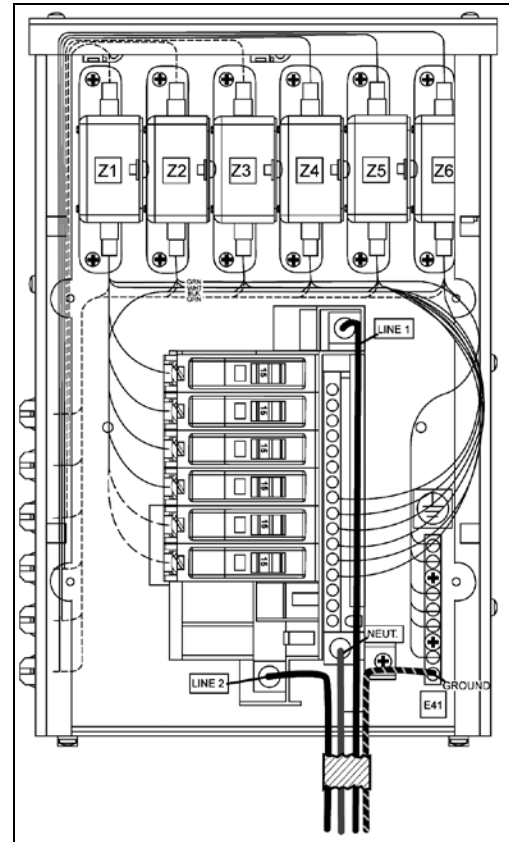


Figure 8: 120/240 V Single-Phase Power Termination

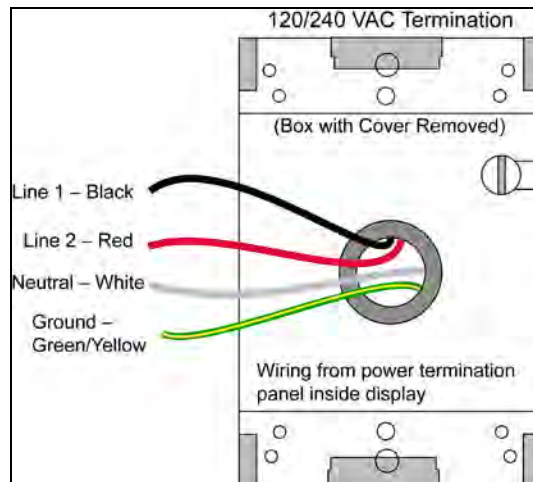


Figure 9: 120/240 VAC Power Termination

The following colors are used for pre-terminated wires:

120 VAC (two wires plus ground)	120/240 VAC (three wires plus ground)
Line 1 - Black	Line 1 - Black
Neutral - White	Line 2 - Red
Grounding - Green-Yellow	Neutral - White
	Grounding - Green-Yellow

3.6 Power Routing in the Display

Check exact power routing on **Drawing B-360218** found in **Appendix A**.

A general power routing is shown in **Figure 10**.

1. Power terminates internally to the power termination panel.
2. Power is routed through filters to the power supplies, which provide power to the controller, MLC, modules, and fans. Power supplies are preset to the proper voltage: 12 VDC.

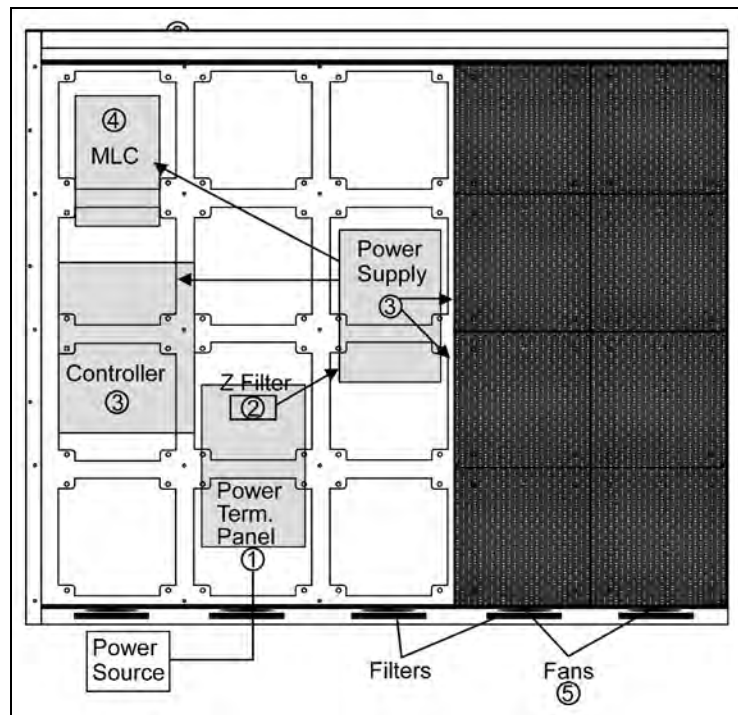


Figure 10: Power Flow Summary

Section 4: Signal Installation Overview

Daktronics GalaxyPro® Revolution displays are equipped to receive various forms of Ethernet communication. GalaxyPro® Revolution displays require the use of ports 4500-4525 for communication and port forwarding applications. For communication signal installation details, consult the quick guide and manual included with the communication equipment. Each communication type and its manual number are listed below.

Communication Type	Communication Manual	Communication Quick Guide
Ethernet	DD1417609	DD1417573
Fiber Ethernet	DD1417611	DD1417581
Wireless Ethernet Bridge	DD1685027	DD1417586

These are the standard communication types, but each site is unique and may include additional equipment. If problems arise, contact the display's seller or Daktronics Customer Service.

4.1 Primary/Mirror Signal Connection

If this display is a two-view primary/mirror display, a quick-connect fiber-optic cable is provided to connect signal between the two faces. Connect J34-Signal Out on the Primary display to J32-Signal In on the Mirror display. Coil excess cable and secure it to the supports to prevent damage from weather or vandalism. **Figure 11** and **Figure 12** show the cable and the quick-connect output. The signal input on the mirror display looks similar to the quick-connect output, but is labeled J32 and receives information from the primary display.

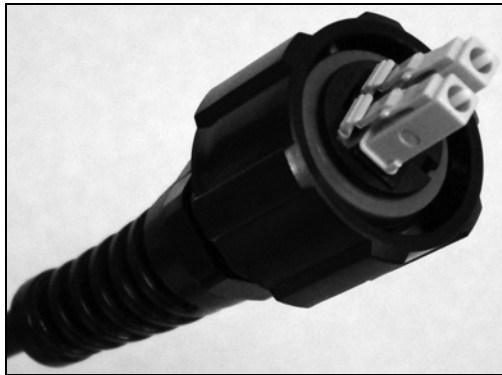


Figure 11: Quick Connect Signal Cable

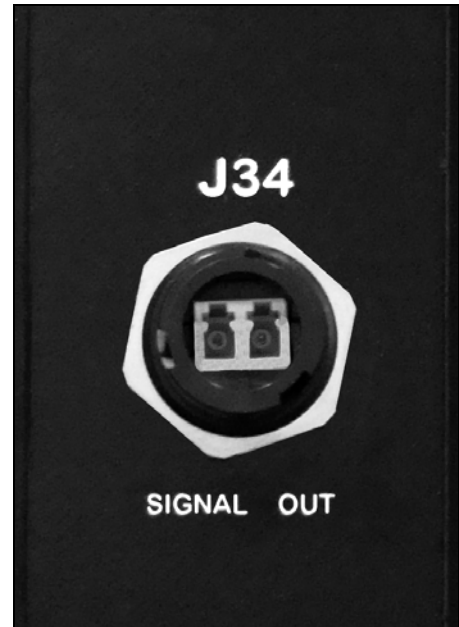


Figure 12: Fiber Interconnect Output

Section 5: Start-up Procedure

Before starting the display, review the following list. **Figure 3** shows the basic display components referred to in each step.

5.1 Start-up Checklist

- Confirm that power is correctly connected to the display.
- Allow for sufficient power as listed in the display **Shop Drawing** and **Power Specs**.
- Assure a main disconnect switch is used to control power.
- Inspect all circuit breakers (internal and external) for sufficient marking and size.
- Confirm that adequate grounding is installed. Each display face must have a separate earth-ground conductor with a resistance of 10 Ohms or less.
- Assure the external communication equipment (signal enclosure, client radio, etc.) is properly installed.
- Inspect signal connections at the control computer.
- Inspect signal connections at the display.
Inspect signal connections between displays when necessary.
- Confirm that the control computer is correctly configured.
Follow the step-by-step directions in the Venus[®] 1500 Help File's Configuration section for correct setup.
- Inspect peripheral equipment (temperature sensor, etc.) for proper installation.

5.2 Start-up Sequence

Each time the display is turned on, an initialization sequence runs. Examples of the information shown on the display are listed in the second column.

Attribute and Description	Example
Current Firmware Version Running on Display	M4-GalaxyProRev 4.X.X
Current Root File System Version Running on Display	Rfs X.X.X
Display Size	Row x Column
Display Color Type	RGB
Bit Depth of Display	32
Currently Configured Time Zone	America/North Dakota/Center
Current IP Address of Display (see note below)	Will vary
Name of Web Service and Port It Currently Runs On	Svc: DisplayConfig Port: 4500
Name of Web Service and Port It Currently Runs On	Svc: DisplayStatus Port: 4501
Name of Web Service and Port It Currently Runs On	Svc: PlayerControl Port: 4502
Name of Web Service and Port It Currently Runs On	Svc: SecurityManagement Port: 4503
Name of Web Service and Port It Currently Runs On	Svc: FileTransfer Port: 4504
Name of Connected Sensor and Its Offset (Address)	Sensor: TEMP Offset: Addr: 1
Name of Connected Sensor and Its Offset (Address)	Sensor: LIGHT_LUX Offset: Addr: 2
User-Defined Display Description	East Employee Entrance

Note: There are two Ethernet ports – Port 0 on the top and Port 1 on the bottom. Using Port 1 is preferred. During the start-up sequence, each port returns its status. When a port is not used, the display will show “not found”. The port that is used returns the IP address.

The order of services and sensors could change. After this sequence is complete, the display will blank. A single pixel will flash in the lower-right corner of the display to show that the display has power, but no presentations are currently running.

5.3 Post Installation Checklist

Verify the following after starting the display:

- Assure all ventilation fans are fully operational.
- Inspect all intake and exhaust vents for obstruction.
- Confirm proper communications from the control computer to the display(s).
- Assure proper communications between display faces when applicable.

Section 6: Maintenance

Power must be turned OFF before any repair or maintenance work is done on the display.

Qualified service personnel are recommended for servicing internal electronic components.

Daktronics' engineering staff must approve ANY changes made to the display. Before altering the display, detailed drawings for proposed modifications must be submitted to Daktronics' engineering staff for evaluation and approval, or the warranty will be null and void.

Daktronics GalaxyPro[®] Revolution displays are front accessible, meaning internal components are accessed by removing the modules. The display must be opened to perform maintenance or troubleshooting. **Figure 13** shows internal component locations. On larger displays, internal components are in the lower left area of the display. Refer to the **Layout Drawings** located in **Appendix A** for the location of components in specific display sizes as component locations can vary.

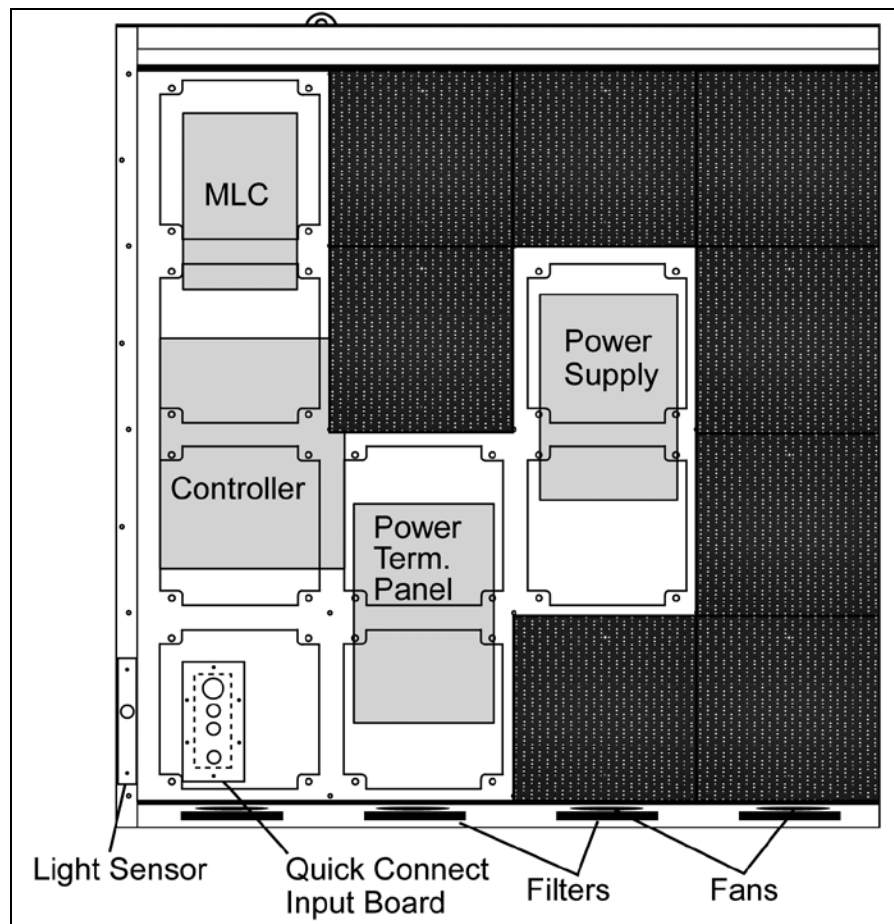


Figure 13: Interior Location of Components

6.1 Proper Ladder Use

A ladder can be used to access displays, although it is not preferable. If a ladder must be used, do not place the ladder directly against the display face. The pressure from the two ladder ends, even when covered with pads, is too concentrated and can damage the LEDs and louvers.

Instead, use a padded or carpeted board across the top of the ladder to distribute the weight of the ladder evenly when placed against the display face. The padded board should be wide enough to spread the weight of the ladder across a minimum of two modules.



Figure 14: Example Ladder Board

6.2 Access to Display Interior

To access the display's interior:

1. Disconnect power to the display.
2. Locate the latch access fasteners shown in **Figure 15** on the module.

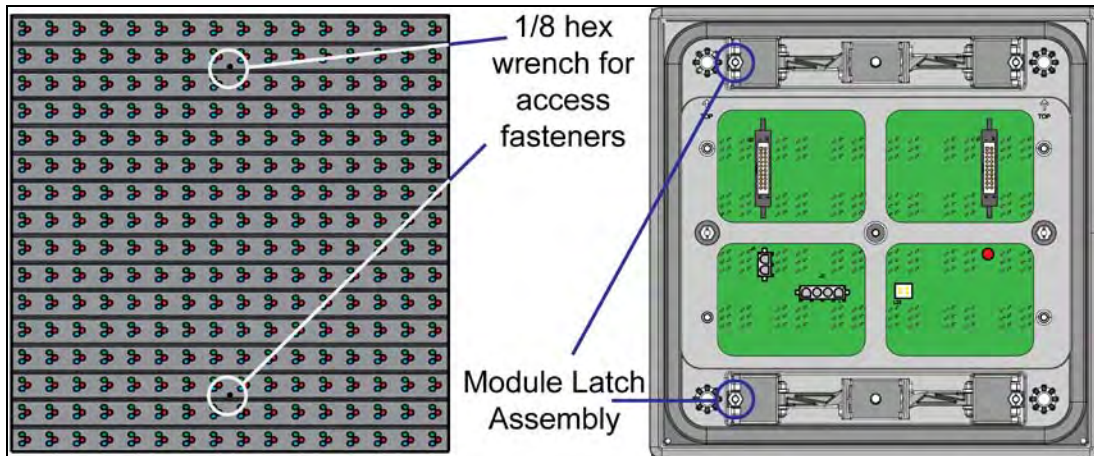


Figure 15: Module Access Locations

3. With a 1/8" hex wrench, turn the latch access fasteners counter-clockwise a quarter turn. Gently pull the module far enough forward to reach the power and ribbon cables as shown in **Figure 16**.

4. Disconnect the two ribbon cables from the module by spreading the tabs on the sides and then lifting the cable head from the jack. Note how they are connected to the back. A generic display module is shown in **Figure 15**.
5. Unplug the power cable by squeezing the tabs on the sides of the plug head and pulling out.
6. When ready to reinstall the module, reconnect the cables to the module, making sure the tabs are tightly pushed against the cable head. Carefully push the ribbon wires back into the cabinet so they are clear of the module edges.
7. Place the module into its proper location, checking that the weather stripping is in place. Latch the module both top and bottom by turning the hex wrench clockwise a quarter turn.



Figure 16: Removing a Module

Weather stripping on the module's back edge must be intact and in good condition to prevent water from seeping into the display.

Module latches must be fully engaged to create a watertight seal around the module's edge. The module must be firmly seated against the display when the latches are fully engaged.

6.3 Ventilation System/Fans/Filters

Frequency of Inspection

Ventilation fans, located along the bottom of the display, pull air into the cabinet from lower vents and exhaust air either out upper vents, as shown in **Figure 4** or adjacent lower vents, as shown in **Figure 17**.

Check the fans every time the display is opened or at a minimum of every three months. Check more often if the display is located in a dusty or harsh environment, such as along a gravel road.

The frequency of inspection will vary greatly

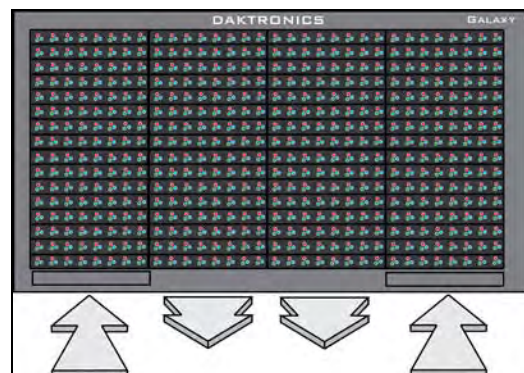


Figure 17: Ventilation Airflow

from display to display as no two display setups are exactly the same. Therefore, Daktronics advises users and service technicians to use their own discretion when establishing an inspection schedule.

Fan Blades

Check the fan blades for dirt and debris, cleaning them and the inside of the display if necessary to maintain fan efficiency and to ensure proper cooling. Spin the fan blades with a pen or pencil to ensure the bearings are free and that the fan is still in balance.

Filters

Below each fan is a filter tray. Each time the fans are inspected, the filters must also be inspected, cleaning or replacing them when necessary.

To access the filter(s), press upward firmly on the tab located on bottom front of the filter tray and pull it outward, as shown in **Figure 18**.

Filters can easily be lifted from the tray, as shown in **Figure 19**, and may be cleaned with water or compressed. Allow the filters to dry before returning them to their trays. Again, Daktronics encourages users and service technicians to use their own discretion when deciding whether to clean or replace the filters.

Air is drawn upward through the filter. Be sure to check the bottom of the filter as this will be the side that requires cleaning.

Air Flow

Replace a fan that does not rotate or operate smoothly.



Figure 18: Opening Filter Drawer



Figure 19: Removing Filter Medium

Make sure the intake vents on the bottom front and the exhaust vents on the top front of the display are not blocked and are free of dust or other debris. Hold a piece of lightweight paper in front of the top edge of the display to detect air movement through the vents.

When mounting the display, the entire front of the display must be exposed to allow for proper ventilation. Aesthetic shrouding (common in monument installations) is not advised. Refer to **Figure 20** and **Figure 21** for examples.

6.4 Display Face Cleaning

Wet Cleaning Process

1. Turn off the power to the display.
2. Mix a mild, non-abrasive, non-petroleum-based detergent and cold water, one ounce of detergent to one gallon of cold water.
3. Saturate a light/medium duty cleaning brush with the soapy water.
4. Use horizontal brush strokes to loosen and remove dirt and grime, washing the display from top to bottom. Use light pressure so as not to damage the LEDs. Clean only an area that is safely within reach from a lift or stage, and then move on to the next section of modules.
5. Rinse the display face with generous amounts of cold water under low pressure. A spot-free rinse agent can be used to reduce water spots.
6. Use soft, dry terrycloth to dry and remove any excess water. Take care not to damage LEDs by catching the cloth on them.
7. Allow the display to completely air-dry for 12 hours before applying power to the display.

Dry Cleaning Process

1. Turn off power to the display.
2. Rub a dry, soft terrycloth towel horizontally across each row of LEDs. Make four passes per row of LEDs before moving to the next row of LEDs.

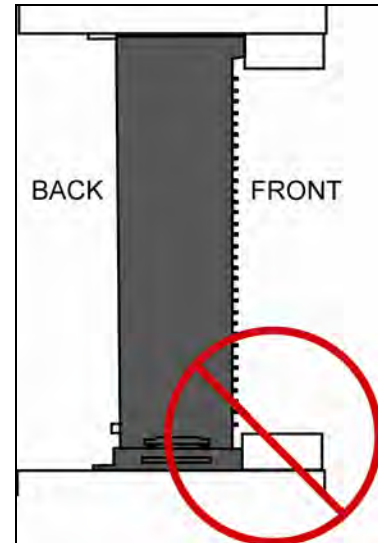


Figure 20: Restricted Airflow

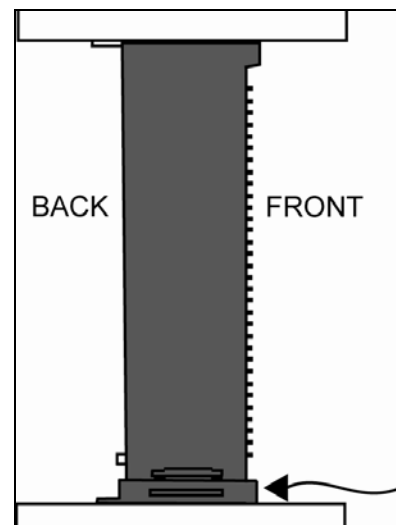


Figure 21: Unrestricted Airflow

Work from top to bottom safely within reach from a lift or a stage. Take care not to damage LEDs or the plastic louvers by catching the cloth on them.

6.5 Annual Inspection

Complete a yearly inspection to maintain safe and dependable display operation. Open the display to visually inspect the cabinet interior and the components. Refer to **Section 6.2** for directions to access the interior. The inspection should address the following issues:

Inspection item	Possible corrective measures
Loose bolts, screws, rivets	Tighten or replace, as required.
Dust around fans, on cabinet bottom	Vacuum or carefully wipe away.
Water intrusion or stains	Replace weather stripping. Tighten module latches. Place silicon sealant around all locations where water might enter. Replace damaged electronic components.
Paint corrosion by footings, tie points, ground rods	Check the metal footings for structural integrity. Replace and/or repaint as necessary. Check ground wire connections at ground rod and ground lug.
Filters	At any inspection, check filters. Clean or replace filters as necessary.

Section 7: Diagnostics and Troubleshooting

This section defines the diagnostic LEDs located on the controller, Multi-line Controller (MLC), and temperature sensor. Troubleshooting tips are also provided for solving display problems.

7.1 Safety Precautions

Disconnect power when servicing the display. **Do not** modify the display structure or attach any panels or coverings to the display without written consent of Daktronics.

7.2 Controller Diagnostics

The controller, shown in **Figure 22**, receives communication from the computer and sends it to the MLCs which output it to the modules. The LEDs on the controller show whether the power and communication signal are working properly.

One or two modules and the controller enclosure cover must be removed to access the controller. Refer to **Section 6.2** for instructions on how to access display enclosure.

Remember to disconnect power to the display before accessing the interior. However, after removing the modules and wires are found to be safe, power can be turned on to view the diagnostic LEDs.

A steady flash of about once per second on the DS2 “Run” LED indicates that the controller is working properly. An increased flash rate indicates that the controller is booting.

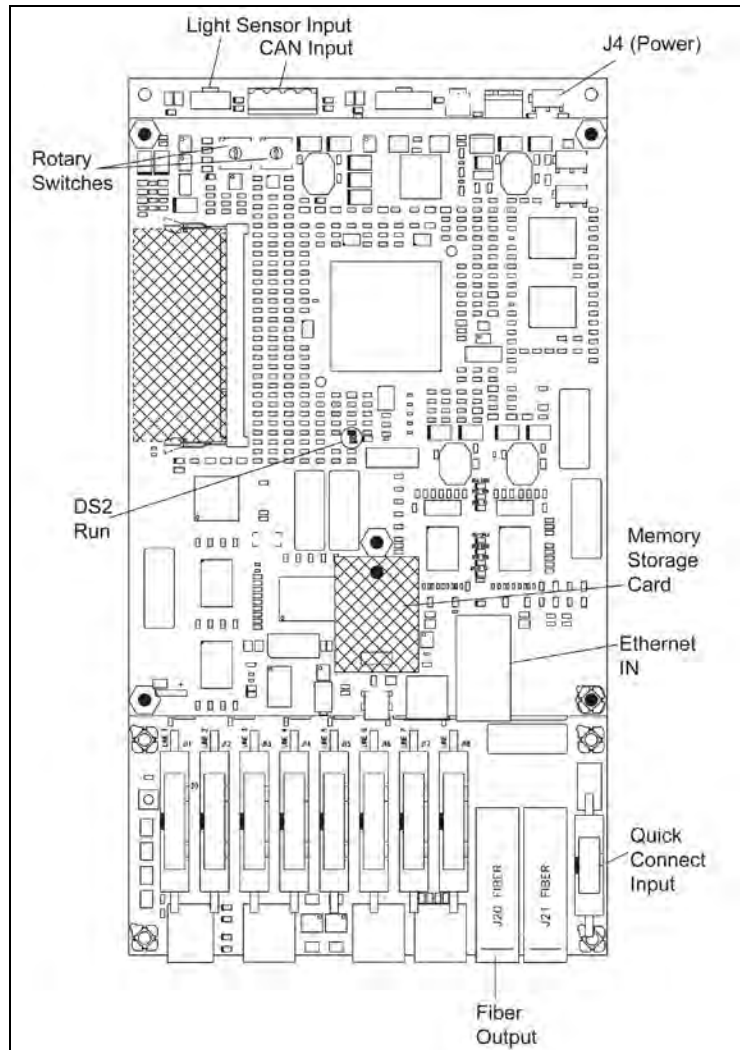


Figure 22: Controller Component Locations

7.3 MLC Diagnostics

Each multi-line controller (MLC) contains four red diagnostic LEDs on the lower right side of the controller, as shown in **Figure 23**. When fiber is properly connected, the LED labeled DS23 (left side) will be off and the other LEDs will be on.

7.4 Temperature Sensor Diagnostics

If the display includes a temperature sensor, the temperature sensor board will provide diagnostic information. The temperature sensor board, shown in **Figure 24**, is located inside the temperature sensor housing which hangs near the display. A flashing DS2 LED indicates that the unit is sending temperature information. It also indicates that the unit has power. Refer to **Appendix B** for temperature sensor mounting and connections.

7.5 Troubleshooting Display Problems

Some common symptoms that may be encountered in a display and simple steps to resolve them follow. Solutions are organized by priority, so try them in order.

Troubleshooting may require removing or replacing modules. Refer to **Section 6.2** for instructions on this procedure. Make sure power and signal cables are reconnected correctly and latches are tightly closed when replacing modules.

Make sure the first module is receiving power.

Consult the Venus[®] 1500 software **Help** file when content problems (including brightness, message, temperature, and testing) occur. Click the **Application** button in the top left corner of the Venus[®] 1500 **Home** page and click **Help**.

Module and LED problems One or more LEDs will not light

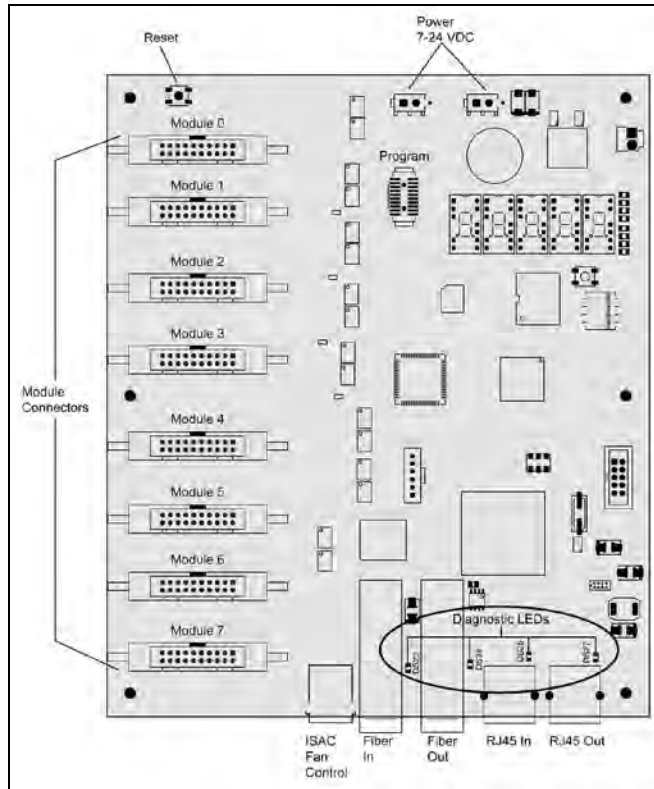


Figure 23: MLC Diagnostic LEDs

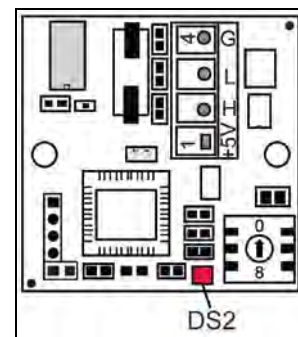


Figure 24: Temperature Sensor Board

- Check/replace ribbon cables on the module.
- If that does not help, the module may need to be replaced.

One or more LEDs on a single module will not turn off

- Check/replace ribbon cables on the module.
- If that does not help, the module may need to be replaced.

A section of the display is not working, as shown in Figure 25

- Check/replace ribbon cables from the last working module in the row to the first non-working module next to it.

- Move or replace the first non-working module, the one on the far left of the non-working section.
- Move or replace the first module to the left of the non-working modules.
- Check the back of the modules to see that the power LEDs are on.

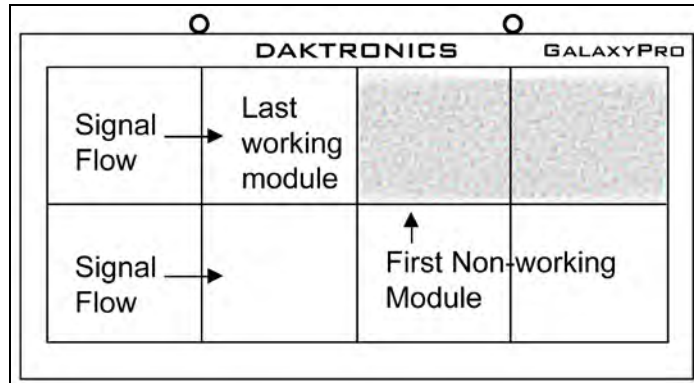


Figure 25: Modules Not Working

- Make sure the power cable to the module is connected.

One row of modules is not working or shows a distorted presentation

- Check/replace the ribbon cables to and from the first non-working module.
- Check for bent pins on the jack going to a non-working module.
- Move or replace the modules that show distorted text.
- Move or replace the first module to the left of the one that is not working.
- Check the fuse from the output and replace if necessary.

A column of the display does not work

- Check that the ribbon and power cables are plugged into the first module in the row.
- While power is on, look at the back of the first malfunctioning module to see if the diagnostic LED is off, implying a power supply problem.

Entire display fails to work

- Check power to first module.
- Check the breakers in the building connected to main power source.
- Check the breakers in the power termination panel (bottom row, second module from the left).
- Check the fiber cables between the controller and the MLC.
- Check the diagnostic LEDs on the controller for Power and Run (**Section 7.1**).
- Check/replace the ribbon cable from the MLC to the modules.
- Verify proper use of the software by checking the software manual.

Before calling Daktronics Customer Service

1. Turn off the power breaker switch. Wait a few minutes and turn it back on. Have someone watch the display(s) to make sure the initialization sequence runs.
2. Once the sequence is complete, try to communicate with the display.
3. Check the Communication and Troubleshooting sections of this manual.
4. Call the service technician or Daktronics Customer Service at 866-343-3122.

It is helpful to be sitting at the control computer while talking with the service technician. This chart is also provided inside the front cover of this manual for easy reference.

Information needed	Fill in the blank
Location address of the display:	
Model number of the display:	GPR
Version of software being used:	Venus 1500 v. _____
Method of communication being used: (See Section 4 for guidance)	
Controller version used in the display:	M4 controller
Firmware Version	M4-GalaxyProRev _._._
	Rfs _._._

Section 8: Parts Replacement

Disconnect power when servicing the display.

8.1 About Replacement Parts

The following table contains some of the items that may need to be replaced over a period of time. **Figure 13** shows the general location of these components. The location of power supplies varies depending on the display's matrix size. Refer to the appropriate **Layout Drawing** for the exact location. If a circuit board or assembly is not listed in the Replacement Parts List, use the label to order a replacement. Most circuit boards and components carry a label that lists its part number. A typical label is shown in **Figure 26** with the part number in bold.

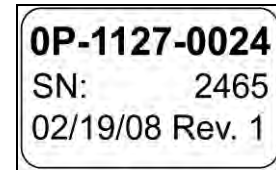


Figure 26: Typical Label

Part Description	Part Number
Air Filter	EN-2310
Cable, Fiber-optic , 3 ft (1m)	W-1659
Cable, Fiber-optic; 10 ft (3.1m)	W-1864
Cable, Fiber-optic; 33 ft. (11m)	W-1685
Cable, RJ11, 6ft. (2m)	0A-1222-2103
Cable, RJ11, 10 ft. (3.05 m)	0A-1222-2109
Cable; RJ45, 2 ft. (61cm)	W-1537
Controller, GalaxyPro® Revolution	0A-1415-0001
Controller Enclosure Fan	B-1068
Electrical Contact Cleaner/Lubricant	CH-1019
Fan; Ventilation	B-1064
Fan Control Cable; 5 ft.(1.5m)(Single)	W-1666
Fan Control Harness, 5 ft.(1.5m)(Dual)	0A-1327-2510
Light Sensor	0A-1327-3010
Module, 12EV	0A-1431-7000
Module, 16mm	0A-1465-7001
Module, 20mm	0A-1429-7000
Module, 23mm	0A-1430-7003
Multi-Line Controller 4051	0P-1273-0060
Multi-Line Controller 4054	0A-1423-5240
Power Supply A-2021R, Rear Mount	0A-1327-0030
Power Supply A-2021R, Side Mount	0A-1327-0032
Quick-connect Cable, Primary/Mirror Interconnect 10 ft (3.1m)	W-1658
Quick-connect Primary Input Assembly	0A-1327-1047

Quick-connect Primary Output/Mirror Input	J-1434
RFI Filter	Z-1007
Ribbon Cable, 10 POS, 24" (61cm)	0A-1000-0074
Ribbon Cable, 20 POS, 18" (46cm)	W-1387
Ribbon Cable, 20 POS, 30" (76cm)	0A-1000-0017
Ribbon Cable, 20 POS, 36" (91cm)	W-1677
Ribbon Cable, 20 POS, 42" (1.1m)	0A-1000-0019
Ribbon Cable, 20 POS, 48" (1.2m)	0A-1000-0020
Ribbon Cable, 20 POS, 72" (1.8m)	W-1678

8.2 Instructions for Replacing Parts

Module Replacement

If LEDs have failed, do not attempt to replace individual LEDs.

Return a failed module to Daktronics for replacement and/or repair.

Each module can be removed separately without moving other components of the display.

1. Turn off power to the display.
2. Release the module from the display cabinet by turning the latch fasteners counter-clockwise a quarter turn. (Follow the instructions in **Section 6.2.**)
3. Disconnect the two ribbon cables from the module, noting how they are connected to the back, by spreading the tabs on the sides and then lifting the cable head from the jack.
4. Unplug the power cable by squeezing the tabs on the sides of the plug head and pulling out.
5. Connect all three cables to the new module, making sure the ribbon cable tabs are tightly pushed against the cable head. Carefully push the cables back into the cabinet so they are clear of the module edges.
6. Place the module into its proper location, checking that the weather stripping is in place. Latch the module tightly both top and bottom by turning the hex wrench a quarter turn clockwise.

Weather stripping on the back edge of the module must be in good condition and returned to its proper position to prevent water from seeping into the display.

Module latches must be fully engaged to create a watertight seal around the edge of the module. The module should be firmly seated against the display when the latches are fully engaged.

Controller Replacement

Tools required: 1/8" hex wrench and 5/16" nut driver

1. Turn off power to the display.
2. Remove the module directly in front of the controller in the lower left area of the display. See **Figure 16** for the approximate location.
3. Remove the controller enclosure cover.
4. Disconnect the power plug from the J4 power jack.
5. Remove all power and signal connections from the controller. Label the cables as they are removed to ensure proper replacement.
6. Remove the six nuts holding the controller in place using a 5/16" nut driver.
7. Install the new controller by replacing the six nuts holding it to the display back. Reconnect power and signal cables. Turn on power, observing the boot-up sequence, and note that the LED in the lower-right corner of the display shows power.
8. After powering the controller up for the first time, it must be reconfigured and all the content will need to be loaded.
The IP or DHCP address of the controller may need to be changed.

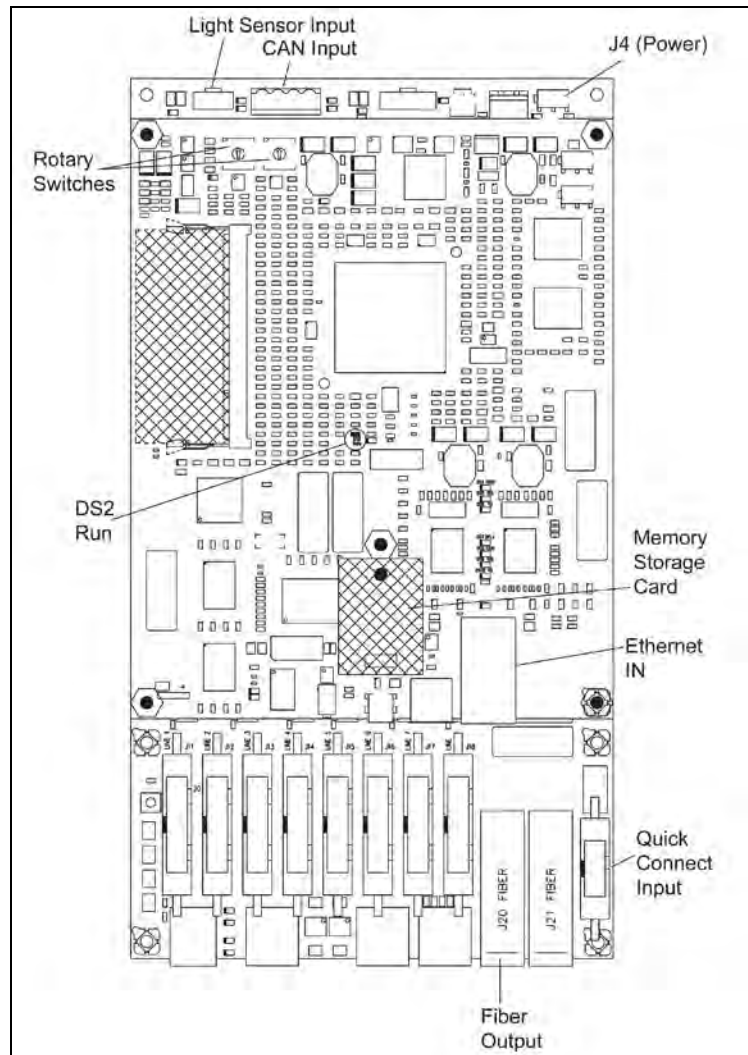


Figure 27: GalaxyPro® Revolution Controller Component Locations

Multi-Line Controller Replacement

Tools required: 5/16" Nutdriver

1. Turn off power to the display.
2. Remove the module directly in front of the MLC. Typically, this is in the left side of the display, approximately the third module from the bottom of the cabinet. Refer to the appropriate **Layout Drawing** for exact location.
3. Remove enclosure cover.
4. Disconnect the fiber cables.
5. Remove all ribbon cables, and unplug the ISAC fan control, labeling the module number as they are removed to insure proper replacement.
6. Remove the six nuts holding the board in place using a 5/16" nut driver.
7. To install the new MLC, move it unit into place and replace the six nuts that hold it to the display back. Reconnect fiber and ribbon cables, and plug the ISAC fan control back in. Turn on power, observing the boot-up sequence. Note that the LEDs to the right of the fiber cables are on; DS23 to the left of the fiber cable should be off. Refer to **Figure 23**.

Power Supply Replacement

Power supplies, shown in **Figure 28** and **Figure 29**, in GalaxyPro® Revolution displays handle a range of power from 120 to 240 volt. The power supply contains a power distribution board on one edge that receives AC power and then supplies DC power to modules and other internal components. Each module is connected to a jack on the power distribution board by an individual power cable.

Tool required: #2 Phillips screwdriver

1. Turn off power to the display.
2. Remove the module directly in front of the appropriate power supply.
3. Disconnect the connectors from the power source as well as those going to the modules, noting the jack numbers going to each module. Also, unplug the ISAC fan control.

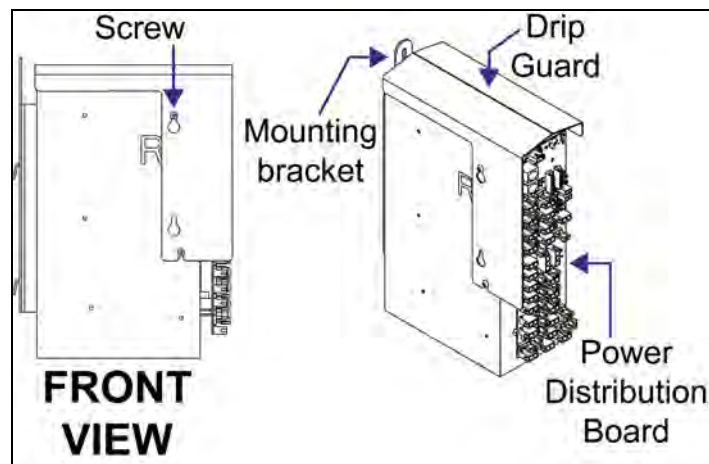


Figure 28: Power Supply

- Loosen the screw(s) holding the drip guard to the power supply and lift the drip guard up and off the power supply.

- Loosen the screw holding the power supply bracket to the cabinet upright and lift it up and off the hooks. Power supplies for 16mm displays feature their mounting bracket on the rear of the power supply.

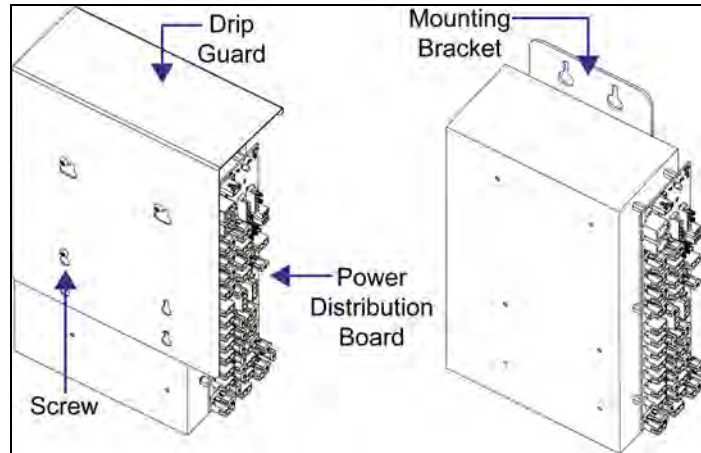


Figure 29: 16mm Power Supply

- Carefully pull the power supply out of the cabinet.

- Move the new power supply into place and tighten the screw on the support bracket.

- Reconnect all the plugs so that each module receives power, and plug the ISAC fan control back in. Refer to the appropriate **Layout Drawing** for module connections, if needed.

Light Sensor Replacement

The light sensor assembly is mounted inside the bottom left edge of the cabinet. Refer to **Figure 13** for location. The entire assembly fits over two screws.

If the light sensor fails, only the circuit board must be replaced. Remove the bottom left module to access the light sensor.

To replace a light sensor circuit board, shown in **Figure 30**:

Tool required: #2 Phillips screwdriver

- Remove the screws that hold the light sensor to the cabinet.
- Unplug the light sensor from the controller and plug the new one in.
- Reattach the new circuit board, following these steps in reverse. Align the new circuit board so the lens lines up with the 1/2" circular opening in the bottom left edge of the display.

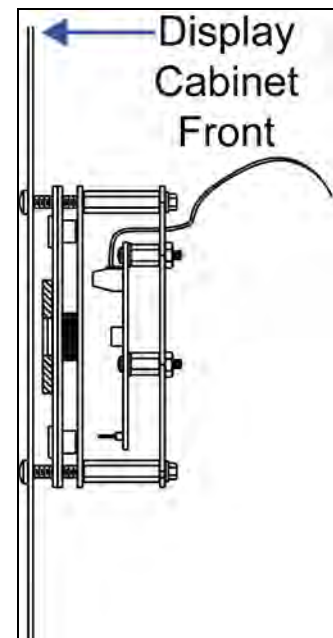


Figure 30: Light Sensor Assembly

Temperature Sensor Replacement

The temperature sensor, shown in **Figure 31** and **Figure 32** is a small sensor board located inside the plastic housing. This is mounted outside, typically either near the display or near the building.

Tool required: $\frac{5}{16}$ " hex driver, #2 Phillips screwdriver

1. Open the temperature sensor housing by removing the four #8-32 nuts from the bottom, and removing the five bottom discs. Three of the discs are solid, while the center two discs have a square hole in them to fit around the sensor.
2. Label the wires connected to the temperature sensor board and then disconnect the cable from the temperature sensor terminal block in the sensor housing.
3. Remove the two screws holding the board to the plastic disc. Install the new board, and replace the two screws.
4. Reconnect the cable to the temperature sensor board, making sure all the wires make a good electrical connection.

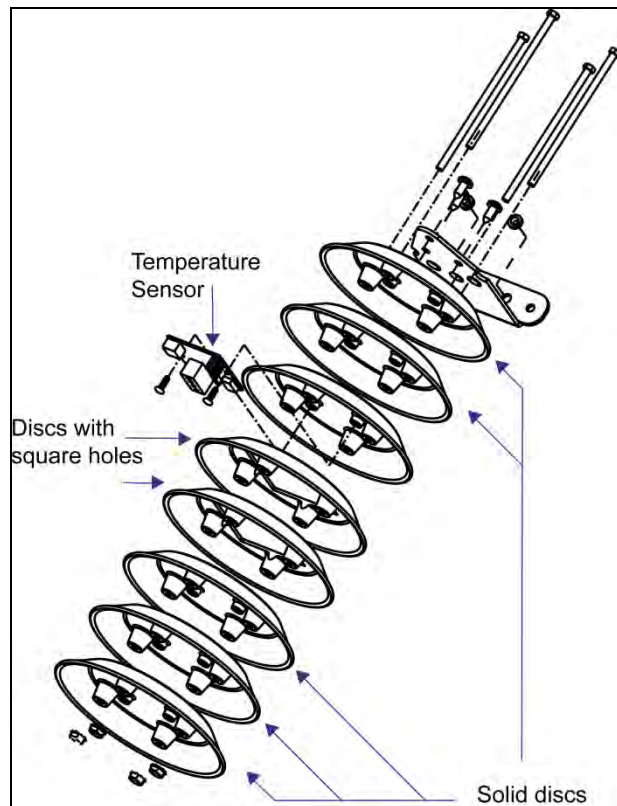


Figure 31: Temperature Sensor

5. Route cable around the sensor board, as shown in **Figure 32**, and then reassemble the sensor enclosure.

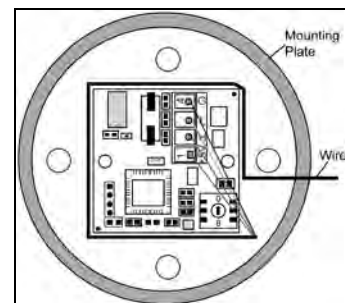


Figure 32: Wire and Sensor Board

Section 9: Daktronics Exchange and Repair & Return Programs

9.1 Exchange Program

The Daktronics Exchange Program is a quick, economical service for replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This not only saves money but also decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before Contacting Daktronics

Fill in these numbers before calling Customer Service:

Display Model Number: _____

Date Installed: _____

Location of Display: _____

Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps:

1. **Call Daktronics Customer Service: 866-343-3122.**
2. **When the new exchange part is received, mail the old part to Daktronics.**

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

 - a. Package the old part in the same shipping materials in which the replacement part arrived.
 - b. Fill out and attach the enclosed UPS shipping document.
 - c. Ship the part to Daktronics.
3. **A charge will be made for the replacement part immediately, unless a qualifying service agreement is in place.** In most circumstances, the replacement part will be invoiced at the time it is shipped.

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

If after 2 weeks Daktronics has still not received the parts back, the customer must pay the second invoice and will not be credited for the return of the failed part. Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

9.2 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:**
Phone: 866-343-3122 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 shipment.**
Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing.
4. **Enclose:**
 - Your name
 - Address
 - Phone number
 - The RMA number
 - A clear description of symptoms

Shipping Address

Daktronics Customer Service
PO Box 5128
201 Daktronics Dr.
Brookings SD 57006

9.3 Daktronics Warranty and Limitation of Liability

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

Glossary

Controller: The “brains” of the display. The controller receives signal communication from the computer and sends the appropriate information to the multi-line controller (MLC). Presentations and schedules may also be stored on the controller for use when desired.

Display Address: An identification number assigned to each display of a network. The control software uses the address to locate and communicate with each display. Displays that are on the same network must have different addresses.

GalaxyPro[®] Revolution: One of Daktronics’ trademarked names for commercial LED matrix displays.

Light Emitting Diode (LED): A low-energy, high-intensity lighting unit. LEDs are the smallest portion of the presentations that appear on the display.

Louver: A black plastic ledge positioned above either individual LEDs or each row of LEDs. Louvers block sunlight and increase the level of contrast on the display face.

Mirror: The second display in a two view (2V) configuration. The mirror display does not have a controller so it displays an exact copy of the information on the primary display. All signal information to the mirror is received through an inter-connect cable from the primary display.

Module: The primary component of a display consisting of LEDs attached to a circuit board encased in a hard plastic body. Individual module sizes vary depending on the pixel pitch of the display and each is individually removable from the front of the display.

Multi-line Controller (MLC): A component that distributes signal from the controller or another MLC to a number of modules.

Network: Consists of multiple displays connected to each other. As many as 240 primary displays can exist on one network.

Picture Element (Pixel): A single LED or cluster of LEDs which work together to create images. The number and color of the LEDs will depend on the pixel pitch. For example, smaller pixels contain fewer LEDs while larger ones contain more LEDs.

Primary: A single-faced unit or the first display in a Primary-Mirror (2V) configuration. The communication signal, light sensor and temperature sensor are connected to this display. The information from these components is relayed from the primary display to the mirror display so that it shows exactly the same information. An inter-connect cable transfers this information from the primary to the mirror display in this configuration.

Pixel Pitch: The amount of space between the center of two pixels (16 mm, 20 mm, etc.). The pixel pitch is equidistant both vertically and horizontally.

Venus[®] 1500: The software on the control computer used to create presentations and send them to the displays. The Venus[®] 1500 software manual is included on the installation disk.

Appendix A: Reference Drawings

Power Specification, Electrical Layout, Schematic, and Fiber-optic Routing Drawings are included in this section. Each Layout Drawing includes a range of widths. Refer to the drawing that correlates with the display's matrix size since component locations, power specifications, and signal routing vary according to display size.

Power Specs, GPR-12EV.....	Drawing A-400539
Power Specs, GPR-16mm	Drawing A-728263
Power Specs, GPR-20mm	Drawing A-707340
Electrical Layout; GPR-72x***-12EV	Drawing B-381778
Electrical Layout; GPR-96x***-12EV	Drawing B-381784
Electrical Layout; GPR-120x***-12EV	Drawing B-381785
Electrical Layout; GPR-64x(80-192)-16mm	Drawing B-758178
Electrical Layout; GPR-64x(208-272)-16mm	Drawing B-758199
Electrical Layout; GPR-80x(80-192)-16mm	Drawing B-758313
Electrical Layout; GPR-80x(208-272)-16mm	Drawing B-758347
Electrical Layout; GPR-96x(80-192)-16mm	Drawing B-758424
Electrical Layout; GPR-96x(208-272)-16mm	Drawing B-758427
Electrical Layout; GPR-64x(48-176)-20mm	Drawing B-720642
Electrical Layout; GPR-64x(192-256)-20mm	Drawing B-720643
Electrical Layout; GPR-80x(48-176)-20mm	Drawing B-720644
Electrical Layout; GPR-80x(192-256)-20mm	Drawing B-720646
Schematic, GPR-12EV, General	Drawing B-360218
Schematic, GPR-16mm, General	Drawing B-728335
Schematic, GPR-20mm, General	Drawing B-709648
Schematic, M4, Primary signal, internal, w/QC & MLC	Drawing B-380351
Fiber-optic Routing	Drawing B-370744

12EV LOUVERED RGB GALAXY DISPLAYS POWER SPECIFICATION CHART


MATRIX SIZE	MAX WATTS	120VAC 1PH 60HZ AMPS	120/240VAC, 1PH, 60HZ (3 WIRE + GND)		240VAC 1PH 50HZ AMPS
			LINE 1 AMPS	LINE 2 AMPS	
48X72	475	3.96	120/240VAC IS NOT AVAILABLE FOR SIZE		1.98
48X96	588	4.90			2.45
48X120	738	6.15			3.07
48X144	850	7.08			3.54
48X168	963	8.02			4.01
48X192	1113	9.27			4.64
48X216	1225	10.21			5.10
48X240	1338		5.83	5.31	5.57
48X264	1488		5.83	6.56	6.20
48X288	1600		7.08	6.25	6.67
48X312	1713		7.08	7.19	7.14
48X336	1825		8.02	7.19	7.60
72X72	681	5.68	120/240VAC IS NOT AVAILABLE FOR SIZE		2.84
72X96	850	7.08			3.54
72X120	1056	8.80			4.40
72X144	1225	10.21			5.10
72X168	1431		5.68	6.25	5.96
72X192	1600		7.08	6.25	6.67
72X216	1806		7.08	7.97	7.53
72X240	1975		8.80	7.66	8.23
72X264	2181		8.80	9.38	9.09
72X288	2350		10.21	9.38	9.79
72X312	2556		11.93	9.38	10.65
72X336	2725		13.33	9.38	11.35
96X72	888	7.40	120/240VAC IS NOT AVAILABLE FOR SIZE		3.70
96X96	1150	9.58			4.79
96X120	1413		7.40	4.38	5.89
96X144	1675		7.40	6.56	6.98
96X168	1938		7.40	8.75	8.07
96X192	2200		9.58	8.75	9.17

MATRIX SIZE	MAX WATTS	120VAC 1PH 60HZ AMPS	120/240VAC, 1PH, 60HZ (3 WIRE + GND)		240VAC 1PH 50HZ AMPS
			LINE 1 AMPS	LINE 2 AMPS	
96X216	2463		11.77	8.75	10.26
96X240	2725		13.96	8.75	11.35
96X264	2988		16.15	8.75	12.45
96X288	3250		18.33	8.75	13.54
96X312	3513		13.96	15.31	14.64
96X336	3775		16.15	15.31	15.73
120X72	1056	8.80	120/240VAC IS N.A.		4.40
120X96	1375		6.15	5.31	5.73
120X120	1694		6.15	7.97	7.06
120X144	2013		8.80	7.97	8.39
120X168	2331		11.46	7.97	9.71
120X192	2650		14.11	7.97	11.04
120X216	2969		16.77	7.97	12.37
120X240	3288		18.02	9.38	13.70
120X264	3606		14.11	15.94	15.03
120X288	3925		16.77	15.94	16.35
120X312	4244		18.02	17.34	17.68
120X336	4563		22.08	15.94	19.01

POWER SPECIFICATION LABEL INSTRUCTIONS:

- REFER TO CHARTS FOR POWER SPECIFICATION INFORMATION.
- LOCATE THE DISPLAY SIZE (MATRIX SIZE).
- IDENTIFY VOLTAGE TYPE:
 - FOR 120VAC, 1PH, 60HZ, LIST AMPS GIVEN.
 - 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.
- IDENTIFY MANUFACTURING PLANT WHERE SHOWN ON MAX WATTS LINE.

EXAMPLE PRODUCT IDENTIFICATION LABEL

 DAKTRONICS, INC. 331 32ND AVE. P.O. BOX 5128 BROOKINGS, SD 57006	ASSY NO. 0A-1466-**** SER. NO. (NEXT ASSIGNED #) MFG DATE (TODAY'S DATE MM/DD/YY) REV XX WORK ORDER NUMBER	GPR-96X120-12EV-RGB RMN: DAKT-0202-00 120/240VAC, 1PH, 60HZ AMPS PER LINE = 7.40 MAX WATTS = 1413
	SEE NOTE 4 - ABBREVIATE MANUFACTURING PLANT _____	

BY USING THE PROPER POWER TERM PANEL, THE ABOVE DISPLAY SIZES CAN BE POWERED BY EITHER 120VAC (2 WIRE + GND), 120/240VAC (3 WIRE + GND) OR 240VAC (2 WIRE + GND) SERVICES (EXCEPT WHERE NOTED).

REV.	DATE	DESCRIPTION	BY	APPR.
03	20 APR 10	ADDED RMN NUMBER TO LABEL	ARH	
02	08APR09	MODIFIED LABEL BY ADDING NOTE 4 ADDED MANUFACTURING PLANT ABBREVIATION	ARH	DJM
01	20 MAY 08	CORRECTED MATRIX SIZE COLUMN	JMG	DJM

DES. BY:	PROJ.:	TITLE:
JMG	GPR 12EV REVOLUTION SERIES FRONT VENT	POWER SPECS, GPR-12EV-(48-120X72-336) FV
APPR. BY:	DRAWN BY:	DATE:
DJM	TGA	01MAY08
REV. NO.	SCALE:	
03		1466-R10A-400539

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DAKTRONICS, INC. BROOKINGS, SD 57006

GPR-16MM-FV GALAXY DISPLAYS POWER SPECIFICATION CHART

REV.	DATE	DESCRIPTION
02	20 APR 10	ADDED RMN NUMBER TO LABEL
01	08APR09	MODIFIED LABEL BY ADDING NOTE 4 ADDED MANUFACTURING PLANT ABBREVIATION
		BY ARH
		APPR. DJM

MATRIX SIZE	MAX WATTS	120VAC 1PH 60HZ AMPS	120/240VAC, 1PH, 60Hz (3 WIRES + GND)		240VAC 1PH 50Hz AMPS
			LINE 1 AMPS	LINE 2 AMPS	
64X80	1125	9.38	120/240 VAC IS N/A		4.69
64X96	1345		6.02	5.19	5.60
64X112	1528		6.02	6.71	6.36
64X128	1710		7.54	6.71	7.13
64X144	1930		7.54	8.54	8.04
64X160	2113		9.06	8.54	8.80
64X176	2333		9.06	10.38	9.72
64X192	2553		12.73	8.54	10.64
64X208	2773		12.73	10.38	11.55
64X224	2955		14.25	10.38	12.31
64X240	3138		15.77	10.38	13.07
64X256	3320		17.29	10.38	13.83
64X272	3540		19.13	10.38	14.75
80X80	1391		5.26	6.33	5.79
80X96	1619		7.16	6.33	6.74
80X112	1847		7.16	8.23	7.70
80X128	2075		9.06	8.23	8.65
80X144	2341	9.82	9.68	9.75	
80X160	2606	13.49	8.23	10.86	
80X176	2872	15.70	8.23	11.97	
80X192	3138	16.84	9.30	13.07	
80X208	3366	18.43	9.61	14.02	
80X224	3594	13.49	16.46	14.97	
80X240	3822	15.70	16.15	15.92	
80X256	4050	17.29	16.46	16.88	
80X272	4316	18.36	17.60	17.98	

MATRIX SIZE	MAX WATTS	120VAC 1PH 60HZ AMPS	120/240VAC, 1PH, 60Hz (3 WIRES + GND)		240VAC 1PH 50Hz AMPS
			LINE 1 AMPS	LINE 2 AMPS	
96X80	1656		6.02	7.78	6.90
96X96	1968		8.61	7.78	8.20
96X112	2279		8.61	10.38	9.49
96X128	2590		13.80	7.78	10.79
96X144	2864		13.80	10.06	11.93
96X160	3213		16.40	10.38	13.39
96X176	3486		18.99	10.06	14.53
96X192	3835		16.40	15.56	15.98
96X208	4146		16.40	18.16	17.28
96X224	4458		16.40	20.75	18.57
96X240	4769		18.99	20.75	19.87
96X256	5080		24.18	18.16	21.17
96X272	5354		24.18	20.44	22.31

PROJ: GALAXYPRO 16MM REVOLUTION SERIES
DAKTRONICS, INC. BROOKINGS, SD 57006

TITLE: P.SPEC,GPR-*X*-16MM-FV,120,120/240,240 VAC
DES. BY: LKERR DRAWN BY: LKERR
REVISION 02 APPR. BY: SCALE: 1=1

1500-R10A-728263

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EXAMPLE PRODUCT IDENTIFICATION LABEL

ASSY NO. 0A-1500-****

SER. NO. (NEXT ASSIGNED #)

MFG DATE (TODAY'S DATE MM/DD/YY) REV XX

DAKTRONICS, INC.
331 32ND AVE
P.O. BOX 5128
BROOKINGS, SD 57006

PHONE 1-805-697-4000

GPR-80X256-16-RGB
RMN: DAKT-0202-00
120/240VAC, 1PH, 60HZ
AMPS PER LINE = 17.29
MAX WATTS = 4050

LL-2306

SEE NOTE 4.
ABBREVIATE MANUFACTURING PLANT

POWER SPECIFICATION LABEL INSTRUCTIONS:

1. REFER TO CHARTS FOR POWER SPECIFICATION INFORMATION.
2. LOCATE THE DISPLAY SIZE (MATRIX SIZE).
3. IDENTIFY VOLTAGE TYPE:
 - FOR 120VAC, 1PH, 60HZ, LIST AMPS GIVEN.
 - 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.
4. IDENTIFY MANUFACTURING PLANT WHERE SHOWN ON MAX WATTS LINE.


GPR-20mm-FV GALAXY DISPLAYS POWER SPECIFICATION CHART

MATRIX SIZE	MAX WATTS	120VAC 1PH 60HZ AMPS	120/240VAC, 1PH, 60Hz (3 WIRES + GND)		240VAC 1PH 50Hz AMPS
			LINE 1 AMPS	LINE 2 AMPS	
64X48	940	7.83	120/240 VAC IS NOT AVAILABLE FOR SIZE		3.92
64X64	1233	10.27			5.14
64X80	1563		5.71	7.31	6.51
64X96	1818		8.15	7.00	7.57
64X112	2110		8.15	9.44	8.79
64X128	2365		9.74	9.97	9.85
64X144	2658		13.02	9.13	11.07
64X160	2950		15.15	9.44	12.29
64X176	3243		17.90	9.13	13.51
64X192	3535		19.18	10.28	14.73
64X208	3828		15.15	16.75	15.95
64X224	4083		17.58	16.44	17.01
64X240	4375		17.05	19.41	18.23
64X256	4630		19.18	19.41	19.29
80X48	1169	9.74	120/240 VAC IS N/A		4.87
80X64	1525		6.77	5.94	6.35
80X80	1881		6.77	8.91	7.84
80X96	2238		9.74	8.91	9.32
80X112	2594		12.71	8.91	10.81
80X128	2950		15.68	8.91	12.29
80X144	3269		17.05	10.19	13.62
80X160	3663		20.02	10.50	15.26
80X176	3981		15.36	17.81	16.59
80X192	4375		18.65	17.81	18.23
80X208	4731		20.24	19.19	19.71
80X224	5088		22.99	19.41	21.20
80X240	5444		25.96	19.41	22.68
80X256	5800		28.93	19.41	24.17

POWER SPECIFICATION LABEL INSTRUCTIONS:

1. REFER TO CHARTS FOR POWER SPECIFICATION INFORMATION.
2. LOCATE THE DISPLAY SIZE (MATRIX SIZE).
3. IDENTIFY VOLTAGE TYPE:
 - FOR 120VAC, 1PH, 60HZ, LIST AMPS GIVEN.
 - 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.
4. IDENTIFY MANUFACTURING PLANT WHERE SHOWN ON MAX WATTS LINE.

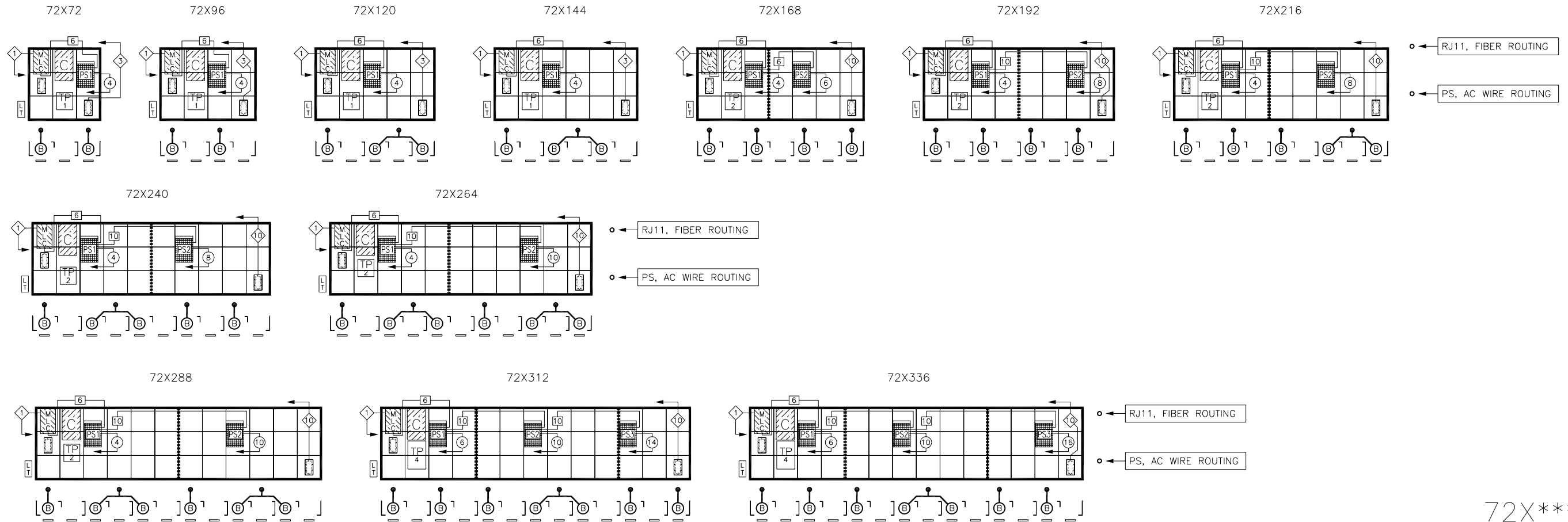
EXAMPLE PRODUCT IDENTIFICATION LABEL

 DAKTRONICS, INC. 331 32ND AVE. P.O. BOX 5128 BROOKINGS, SD 57006 PHONE 1-605-697-4000	ASSY NO. OA-1479-****	EXAMPLE	SER. NO. (NEXT ASSIGNED #)	GPR-64X256-20-RGB RMN: DAKT-0202-00
	MFG DATE (TODAY'S DATE MM/DD/YY) REV XX		WORK ORDER NUMBER	120/240VAC, 1PH, 60HZ AMPS PER LINE = 19.41 MAX WATTS = 4630

SEE NOTE 4.
ABBREVIATE MANUFACTURING PLANT

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: GALAXYPRO 20mm REVOLUTION SERIES			
TITLE: P,SPEC., GPR-*X*-20mm-FV,120,120/240,240 VAC			
DES. BY: LKERR		DRAWN BY: LKERR	
		DATE: 25 SEP 08	
REVISION	APPR. BY:	1479-R10A-707340	
02	SCALE: 1=1		

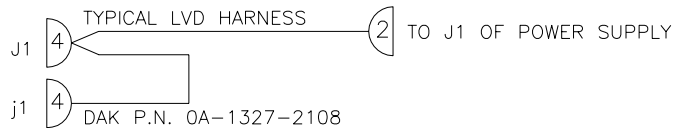
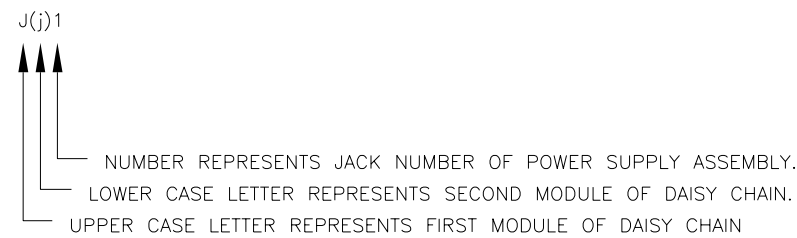
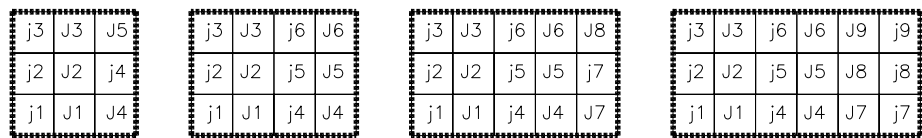
REV.	DATE	DESCRIPTION	BY	APPR.
02	20 APR 10	ADDED RMN NUMBER TO LABEL	ARH	
01	16APR09	MODIFIED LABEL BY ADDING NOTE 4. ADDED MANUFACTURING PLANT ABBREVIATION	ARH	DJM



72X*** 12EV-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

MLC TO 1ST MODULE	
LINE P#	P.N.
1 (P4)	*0017
2 (P7)	*0017
3 (P9)	*0019

(* ADD NUMBER TO OA-1000-_____ FOR ENTIRE P.N.)

NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1466-R03B-360218 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1466-R10A-400539 FOR DISPLAY POWER SPECIFICATIONS.

<p><u>ISAC BUSS RJ CABLES</u></p> <p>④ OA-1222-2103... CABLE, RJ11 TO RJ11, STRT, 6 FT</p> <p>⑩ OA-1222-2109... CABLE, RJ11 TO RJ11, STRT, 10 FT</p>		<p><u>POWER SUPPLY HARNESSES</u></p> <p>② . OA-1327-2061, 2 FT ⑩ . OA-1327-2012, 10 FT</p> <p>④ . OA-1327-2062, 4 FT ⑫ . OA-1327-2013, 12 FT</p> <p>⑥ . OA-1327-2010, 6 FT ⑭ . OA-1327-2014, 14 FT</p> <p>⑧ . OA-1327-2011, 8 FT ⑯ . OA-1327-2015, 16 FT</p>											
<p><u>POWER TERM PANEL TP#</u></p> <table border="1"> <tr> <td><u>120/240VAC, 1 PH</u></td> <td><u>240VAC, 1 PH</u></td> </tr> <tr> <td>OA-1327-0120 (1CKT)</td> <td>OA-1327-0122 (1CKT)</td> </tr> <tr> <td>OA-1327-0121 (2CKT)</td> <td>OA-1327-0123 (2CKT)</td> </tr> <tr> <td>OA-1327-0137 (4CKT)</td> <td>OA-1327-0139 (4CKT)</td> </tr> <tr> <td>OA-1327-0136 (6CKT)</td> <td>OA-1327-0138 (6CKT)</td> </tr> </table>				<u>120/240VAC, 1 PH</u>	<u>240VAC, 1 PH</u>	OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)	OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)	OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)	OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)
<u>120/240VAC, 1 PH</u>	<u>240VAC, 1 PH</u>												
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)												
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)												
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)												
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)												
<p><u>SINGLE FAN HARNESS</u> W-1666</p> <p><u>DUAL FAN HARNESS</u> OA-1327-2510</p>		<p>FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.</p>											
<p><u>FILTER</u> EN-2310, MP-1272</p> <p><u>FAN</u> B-1064</p> <p><u>MLC</u> OP-1273-0060</p> <p><u>POWER SUPPLY</u> OA-1327-0030</p> <p><u>MODULE</u> 11.808" X 11.808" 24 PIXEL X 24 PIXEL 12MM C-C / 0.492" C-C</p> <p>AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.</p> <p><u>WIRE SUPPORT</u> ○ ICON IDENTIFIES THE WIRE SUPPORT LOCATION</p>		<p><u>FIBER CABLES (METERS)</u></p> <p>◇ W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT</p> <p>◇ W-1864... QC RIGHT TO CNTRLR J21, 72 WIDE TO 144 WIDE</p> <p>◇ W-1685... QC RIGHT TO CNTRLR J21, 168 WIDE TO 336 WIDE</p>											
<p>NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.</p>													
<p><u>PRIMARY ASSEMBLIES</u></p> <p>CONTROLLER ④ OA-1415-0001</p> <p>QUICK CONNECT LEFT ④ OA-1327-1024</p> <p>QUICK CONNECT RIGHT ④ OA-1327-1025</p> <p>LIGHT DETECTOR ④ OA-1327-3010</p>													
<p><u>MIRROR ASSEMBLIES</u></p> <p>QUICK CONNECT LEFT ④ OA-1327-1026</p> <p>QUICK CONNECT BLANK ④ OA-1327-1027</p> <p>BLANK LIGHT DETECTOR ④ OA-1213-4009</p>													

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03	23SEP08	UPDATED COMPONENT LAYOUT DWGS UPDATED RIBBON CABLE CHART	DCARR	
02	31JUL08	UPDATED LAYOUT DRAWINGS ADDED POWER SPEC NOTE ADDED 240V 4 AND 6 CIRCUIT TERM PANELS	JMG	
01	02JUL08	ADDED FAN FILTER SYMBOLS CHANGED QUICK CONNECT SYMBOLS UPDATED KEY	JMG	DJM
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

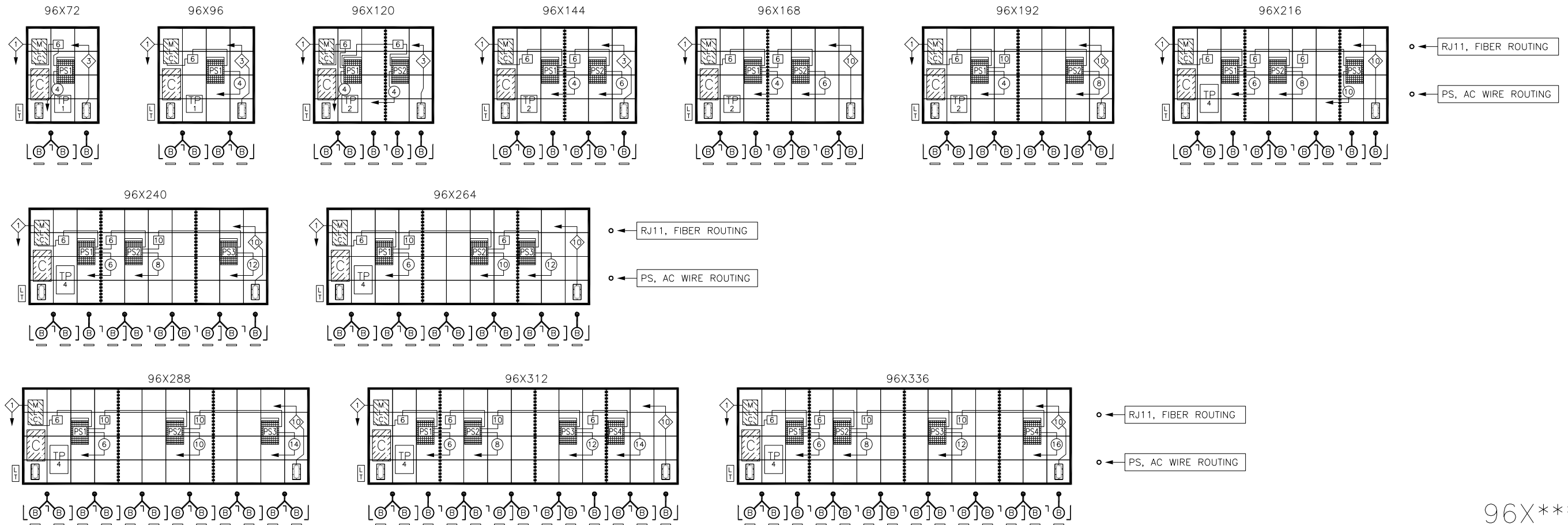
PROJ: GPR-12EV REVOLUTION SERIES

TITLE: ELECT LAYOUT; GPR-72X***-12EV-RGB-P/M

DES. BY: LKERR DRAWN BY: DMATHER DATE: 31 MAR 08

REVISION 03 APPR. BY: SCALE: 1=55

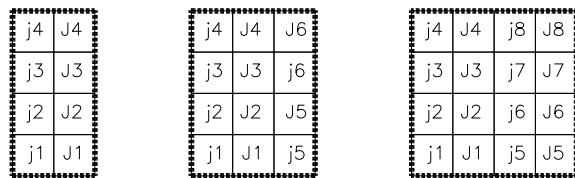
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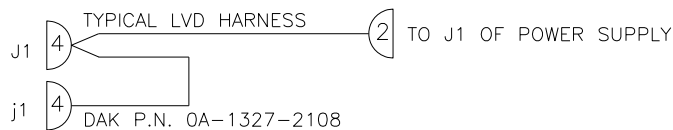
96X*** 12EV-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



J(j)1
 ↑↑↑
 NUMBER REPRESENTS JACK NUMBER OF POWER SUPPLY ASSEMBLY.
 LOWER CASE LETTER REPRESENTS SECOND MODULE OF DAISY CHAIN.
 UPPER CASE LETTER REPRESENTS FIRST MODULE OF DAISY CHAIN



RIBBON CABLE CHART

MLC TO 1ST MODULE	
LINE P#	P.N.
1 (P4)	*0019
2 (P7)	*0017
3 (P9)	*0017
4 (P11)	*0019

(* ADD NUMBER TO OA-1000-_____ FOR ENTIRE P.N.)
 NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1466-R03B-360218 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1466-R10A-400539 FOR DISPLAY POWER SPECIFICATIONS.

<p>ISAC BUSS RJ CABLES</p> <p>⑥ OA-1222-2103... CABLE, RJ11 TO RJ11, STRT, 6 FT</p> <p>⑩ OA-1222-2109... CABLE, RJ11 TO RJ11, STRT, 10 FT</p>	<p>POWER SUPPLY HARNESSES</p> <p>② . OA-1327-2061, 2 FT ⑩ . OA-1327-2012, 10 FT</p> <p>④ . OA-1327-2062, 4 FT ⑫ . OA-1327-2013, 12 FT</p> <p>⑥ . OA-1327-2010, 6 FT ⑭ . OA-1327-2014, 14 FT</p> <p>⑧ . OA-1327-2011, 8 FT ⑯ . OA-1327-2015, 16 FT</p>										
<p>POWER TERM PANEL TP#</p> <table border="1"> <tr> <th>120/240VAC, 1 PH</th> <th>240VAC, 1 PH</th> </tr> <tr> <td>OA-1327-0120 (1CKT)</td> <td>OA-1327-0122 (1CKT)</td> </tr> <tr> <td>OA-1327-0121 (2CKT)</td> <td>OA-1327-0123 (2CKT)</td> </tr> <tr> <td>OA-1327-0137 (4CKT)</td> <td>OA-1327-0139 (4CKT)</td> </tr> <tr> <td>OA-1327-0136 (6CKT)</td> <td>OA-1327-0138 (6CKT)</td> </tr> </table>		120/240VAC, 1 PH	240VAC, 1 PH	OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)	OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)	OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)	OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)
120/240VAC, 1 PH	240VAC, 1 PH										
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)										
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)										
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)										
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)										
<p>FIBER CABLES (METERS)</p> <p>◇ W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT</p> <p>◇ W-1864... QC RIGHT TO CNTRLR J21, 72 WIDE TO 144 WIDE</p> <p>◇ W-1685... QC RIGHT TO CNTRLR J21, 168 WIDE TO 336 WIDE</p>											
<p>NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.</p>											
<p>PRIMARY ASSEMBLIES</p> <p>CONTROLLER [Symbol] OA-1415-0001</p> <p>QUICK CONNECT LEFT [Symbol] OA-1327-1024</p> <p>QUICK CONNECT RIGHT [Symbol] OA-1327-1025</p> <p>LIGHT DETECTOR [Symbol] OA-1327-3010</p>											
<p>MIRROR ASSEMBLIES</p> <p>QUICK CONNECT LEFT [Symbol] OA-1327-1026</p> <p>QUICK CONNECT BLANK [Symbol] OA-1327-1027</p> <p>BLANK LIGHT DETECTOR [Symbol] OA-1213-4009</p>											

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-12EV REVOLUTION SERIES

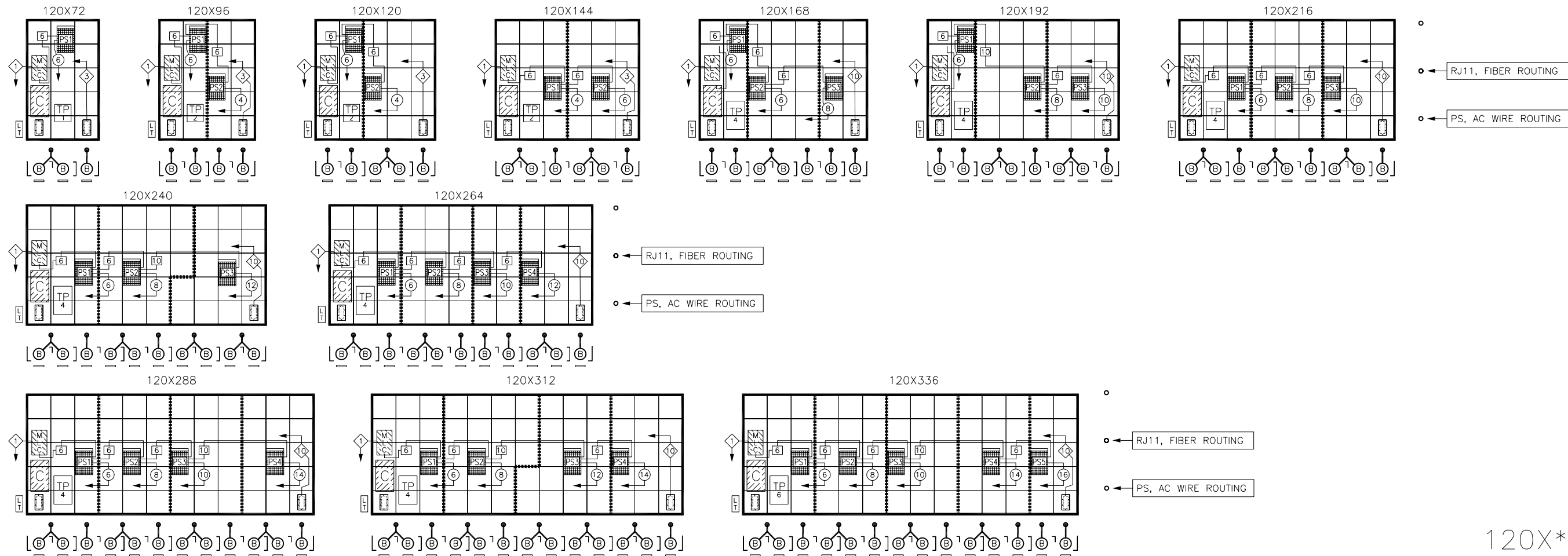
TITLE: ELECT LAYOUT; GPR-96X***-12EV-RGB-P/M

DES. BY: LKERR DRAWN BY: DMATHER DATE: 31 MAR 08

REV.	DATE	DESCRIPTION	BY	APPR.
03	25 SEP 08	UPDATED POSITION OF QC PANELS, CONTROLLERS AND MLCs	DCARR	
02	31 JUL 08	UPDATED LAYOUT DRAWINGS ADDED POWER SPEC NOTE ADDED 240V 4 AND 6 CIRCUIT TERM PANELS	JMG	
01	02 JUL 08	ADDED FAN FILTER SYMBOLS CHANGED QUICK CONNECT SYMBOLS UPDATED KEY	JMG	DJM

REVISION 03 APPR. BY: SCALE: 1=55

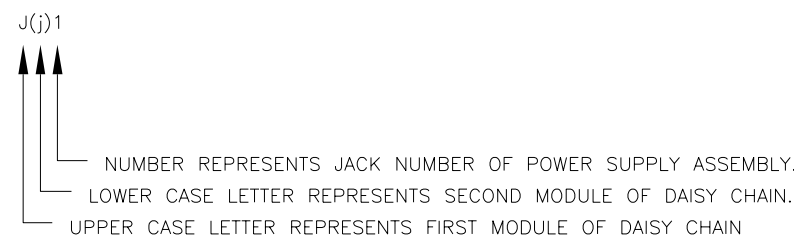
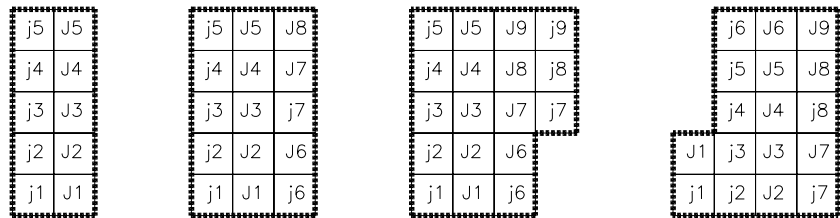
1466-E10B-381784



120X*** 12EV-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

MLC TO 1ST MODULE	
LINE P#	P.N.
1 (P4)	*0021
2 (P7)	*0019
3 (P9)	*0017
4 (P11)	*0017
5 (P13)	*0019

(* ADD NUMBER TO 0A-1000-_____ FOR ENTIRE P.N.)

NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1466-R03B-360218 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1466-R10A-400539 FOR DISPLAY POWER SPECIFICATIONS.

<p>ISAC BUSS RJ CABLES</p> <p>⑤ OA-1222-2103... CABLE, RJ11 TO RJ11, STRT, 6 FT</p> <p>⑥ OA-1222-2109... CABLE, RJ11 TO RJ11, STRT, 10 FT</p>	<p>POWER SUPPLY HARNESSES</p> <p>② . OA-1327-2061, 2 FT ⑩ . OA-1327-2012, 10 FT</p> <p>④ . OA-1327-2062, 4 FT ⑪ . OA-1327-2013, 12 FT</p> <p>⑥ . OA-1327-2010, 6 FT ⑬ . OA-1327-2014, 14 FT</p> <p>⑧ . OA-1327-2011, 8 FT ⑭ . OA-1327-2015, 16 FT</p>										
<p>POWER TERM PANEL TP</p> <table border="1"> <tr> <th>120/240VAC, 1 PH</th> <th>240VAC, 1 PH</th> </tr> <tr> <td>OA-1327-0120 (1CKT)</td> <td>OA-1327-0122 (1CKT)</td> </tr> <tr> <td>OA-1327-0121 (2CKT)</td> <td>OA-1327-0123 (2CKT)</td> </tr> <tr> <td>OA-1327-0137 (4CKT)</td> <td>OA-1327-0139 (4CKT)</td> </tr> <tr> <td>OA-1327-0136 (6CKT)</td> <td>OA-1327-0138 (6CKT)</td> </tr> </table>	120/240VAC, 1 PH	240VAC, 1 PH	OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)	OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)	OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)	OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)	<p>FIBER CABLES (METERS)</p> <p>① W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT</p> <p>③ W-1864... QC RIGHT TO CNTRLR J21, 72 WIDE TO 144 WIDE</p> <p>④ W-1685... QC RIGHT TO CNTRLR J21, 168 WIDE TO 336 WIDE</p>
120/240VAC, 1 PH	240VAC, 1 PH										
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)										
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)										
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)										
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)										
<p>SINGLE FAN HARNESS W-1666</p> <p>DUAL FAN HARNESS OA-1327-2510</p> <p>FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.</p>	<p>NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.</p>										
<p>LEGEND:</p> <p>FILTER — EN-2310, MP-1272</p> <p>FAN ⊕ B-1064</p> <p>MLC ⊞ OP-1273-0060</p> <p>POWER SUPPLY ⊞ OA-1327-0030</p> <p>MODULE □ 11.808" X 11.808" 24 PIXEL X 24 PIXEL 12MM C-C / 0.492" C-C</p> <p>AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.</p> <p>WIRE SUPPORT ○ ICON IDENTIFIES THE WIRE SUPPORT LOCATION</p>	<p>PRIMARY ASSEMBLIES</p> <p>CONTROLLER ⊞ OA-1415-0001</p> <p>QUICK CONNECT LEFT ⊞ OA-1327-1024</p> <p>QUICK CONNECT RIGHT ⊞ OA-1327-1025</p> <p>LIGHT DETECTOR ⊞ OA-1327-3010</p> <p>MIRROR ASSEMBLIES</p> <p>QUICK CONNECT LEFT ⊞ OA-1327-1026</p> <p>QUICK CONNECT BLANK ⊞ OA-1327-1027</p> <p>BLANK LIGHT DETECTOR ⊞ OA-1213-4009</p>										

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03	23SEP08	UPDATED LAYOUT DRAWINGS, CNTRLR, MLC BLOCKS & CABLE CHART	DCARR	
02	31JUL08	UPDATED LAYOUT DRAWINGS ADDED POWER SPEC NOTE ADDED 240V 4 AND 6 CIRCUIT TERM PANELS	JMG	
01	02JUL08	ADDED FAN FILTER SYMBOLS CHANGED QUICK CONNECT SYMBOLS UPDATED KEY	JMG	DJM
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

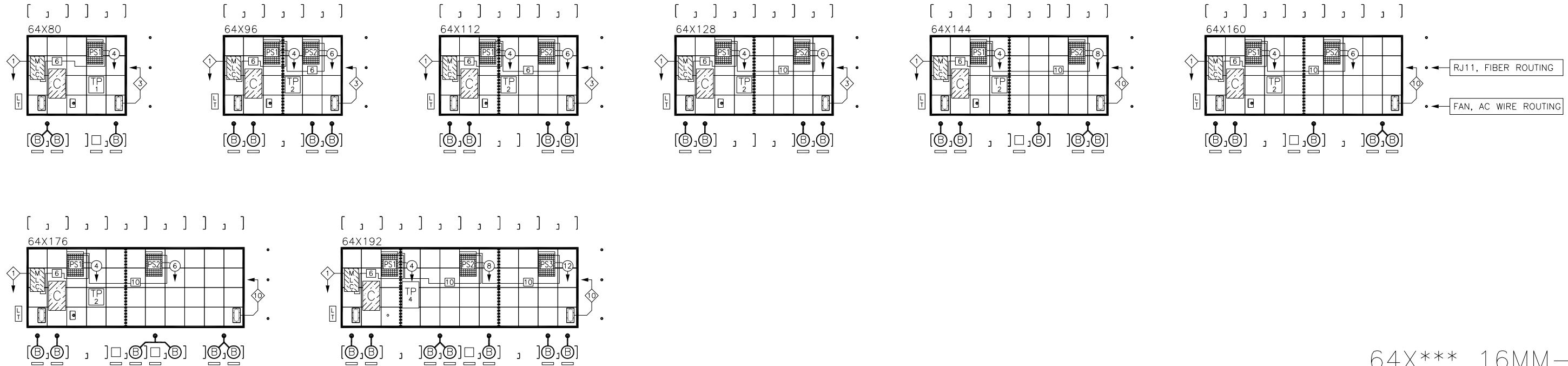
PROJ: GPR-12EV REVOLUTION SERIES

TITLE: ELECT LAYOUT; GPR-120X***-12EV-RGB-P/M

DES. BY: LKERR DRAWN BY: DMATHER DATE: 31 MAR 08

REVISION 03 APPR. BY: SCALE: 1=55

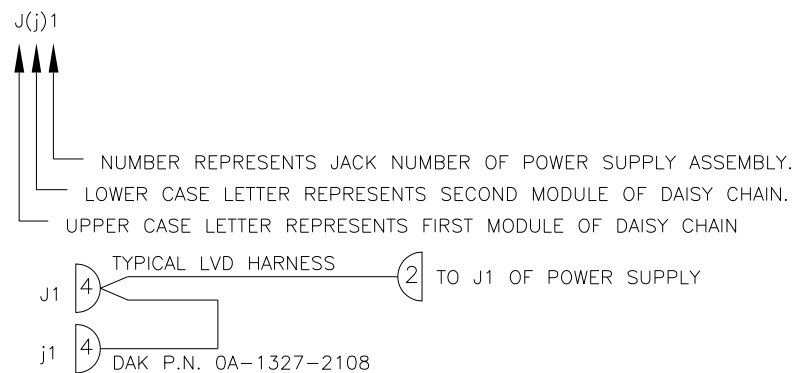
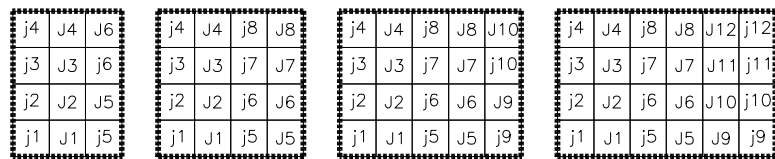
1466-E10B-381785



64X*** 16MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	*0020
2 (P7)	*0018
3 (P9)	*0017
4 (P11)	*0017

(* ADD NUMBER TO OA-1000-____ FOR ENTIRE P.N.)

NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

1. REFER TO GENERAL SCHEMATIC DRAWING 1500-R03B-728335 FOR POINT TO POINT WIRING DETAIL.
2. REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
3. REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
4. REFER TO POWER SPEC. DRAWING 1500-R10A-728263 FOR DISPLAY POWER SPECIFICATIONS.

<p>SINGLE FAN HARNESS W-1666</p> <p>DUAL FAN HARNESS OA-1327-2510</p>	<p>FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.</p>	<p><u>ISAC BUSS RJ CABLES</u></p> <p> OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT</p> <p> OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT</p>										
<p>POWER TERM PANEL </p> <table border="1"> <thead> <tr> <th>120/240VAC, 1 PH</th> <th>240VAC, 1 PH</th> </tr> </thead> <tbody> <tr> <td>OA-1327-0120 (1CKT)</td> <td>OA-1327-0122 (1CKT)</td> </tr> <tr> <td>OA-1327-0121 (2CKT)</td> <td>OA-1327-0123 (2CKT)</td> </tr> <tr> <td>OA-1327-0137 (4CKT)</td> <td>OA-1327-0139 (4CKT)</td> </tr> <tr> <td>OA-1327-0136 (6CKT)</td> <td>OA-1327-0138 (6CKT)</td> </tr> </tbody> </table>		120/240VAC, 1 PH	240VAC, 1 PH	OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)	OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)	OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)	OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)	<p><u>FIBER CABLES (METERS)</u></p> <p> W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT</p> <p> W-1864... QC RIGHT TO CNTRLR J21, 80 WIDE TO 128 WIDE</p> <p> W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 272 WIDE</p>
120/240VAC, 1 PH	240VAC, 1 PH											
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)											
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)											
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)											
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)											
<p><u>POWER SUPPLY HARNESSES</u></p> <p>...OA-1327-2062, 4 FT ...OA-1327-2013, 12 FT</p> <p>...OA-1327-2010, 6 FT ...OA-1327-2014, 14 FT</p> <p>...OA-1327-2011, 8 FT ...OA-1327-2015, 16 FT</p> <p>...OA-1327-2012, 10 FT ...OA-1327-2016, 18 FT</p>		<p>NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.</p>										
<p>WIRE SUPPORT ICON IDENTIFIES THE WIRE SUPPORT LOCATION</p> <p>J-BOX SEE BOM</p> <p>PLUG HS-1558</p> <p>FILTER EN-2310, MP-1272</p> <p>BLOCKING PLATE OM-324577</p> <p>FAN B-1064</p> <p>MLC OA-1423-5240</p> <p>POWER SUPPLY OA-1327-0032</p> <p>MODULE 10.400" X 10.400" 16 PIXEL X 16 PIXEL 16MM C-C / 0.650" C-C</p>		<p><u>PRIMARY ASSEMBLIES</u></p> <p>CONTROLLER OA-1415-0001</p> <p>QUICK CONNECT LEFT PRIMARY INPUT (REFER TO DWG-00410451)</p> <p>QUICK CONNECT RIGHT PRIMARY OUTPUT (REFER TO DWG-00410451)</p> <p>LIGHT DETECTOR OA-1327-3010</p>										
		<p><u>MIRROR ASSEMBLIES</u></p> <p>QUICK CONNECT LEFT MIRROR INPUT (REFER TO DWG-00410451)</p> <p>QUICK CONNECT BLANK OA-1327-1027</p> <p>BLANK LIGHT DETECTOR OA-1213-4009</p>										

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-16MM REVOLUTION SERIES FV

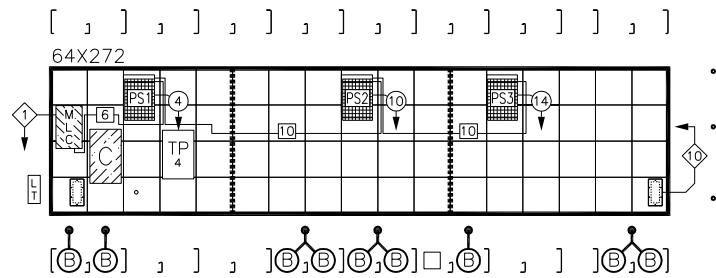
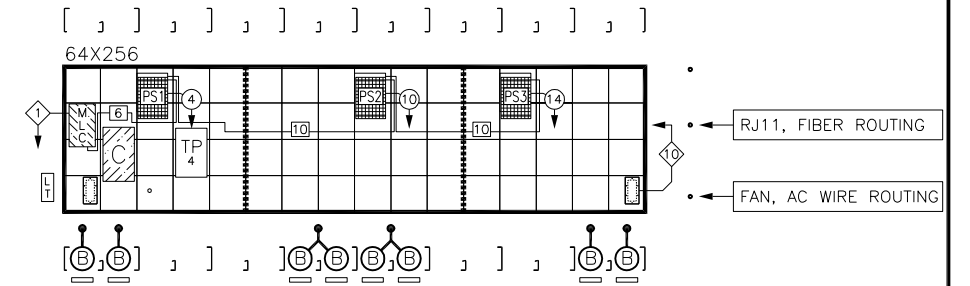
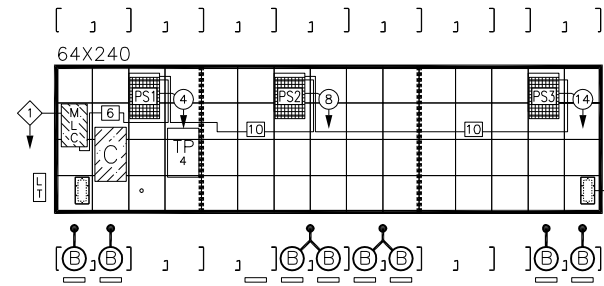
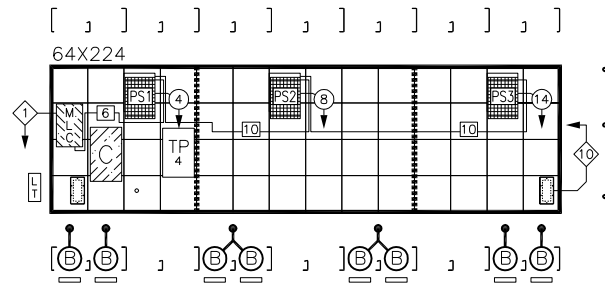
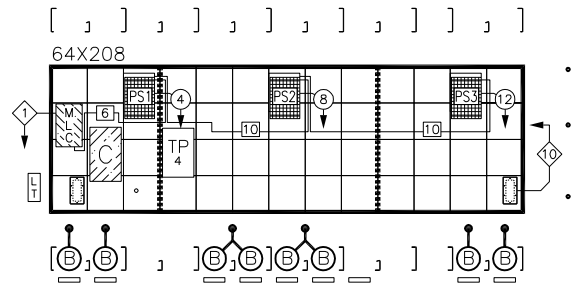
TITLE: ELECT LAYOUT, GPR-64X(80-192)-16-RGB-P/M 10F2

DES. BY: LKERR DRAWN BY: LKERR DATE: 17 NOV 08

REVISION APPR. BY: SCALE: 1=55

1500-E10B-758178

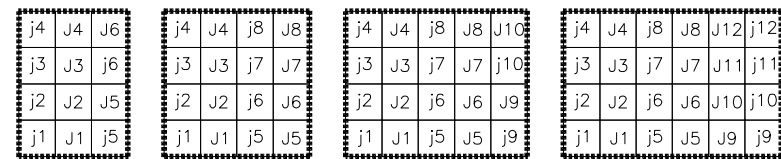
REV.	DATE	DESCRIPTION	BY	APPR.
01	17 JUN 09	ADDED BLOCKING PLATE UPDATED MLC PART NUMBER	ARH	



64X*** 16MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

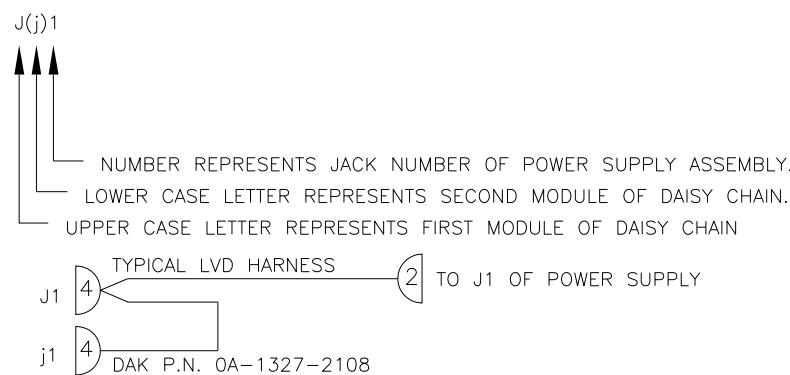
LINE P#	P.N.
1 (P4)	*0020
2 (P7)	*0018
3 (P9)	*0017
4 (P11)	*0017

(* ADD NUMBER TO 0A-1000-____ FOR ENTIRE P.N.)

NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1500-R03B-728335 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1500-R10A-728263 FOR DISPLAY POWER SPECIFICATIONS.



SINGLE FAN HARNESS W-1666
 DUAL FAN HARNESS 0A-1327-2510

FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.

POWER TERM PANEL TP#

120/240VAC, 1 PH	240VAC, 1 PH
0A-1327-0120 (1CKT)	0A-1327-0122 (1CKT)
0A-1327-0121 (2CKT)	0A-1327-0123 (2CKT)
0A-1327-0137 (4CKT)	0A-1327-0139 (4CKT)
0A-1327-0136 (6CKT)	0A-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

④...0A-1327-2062, 4 FT	⑫...0A-1327-2013, 12 FT
⑥...0A-1327-2010, 6 FT	⑭...0A-1327-2014, 14 FT
⑧...0A-1327-2011, 8 FT	⑯...0A-1327-2015, 16 FT
⑩...0A-1327-2012, 10 FT	⑰...0A-1327-2016, 18 FT

AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.

WIRE SUPPORT • ICON IDENTIFIES THE WIRE SUPPORT LOCATION

J-BOX □ SEE BOM
 PLUG • HS-1558
 FILTER — EN-2310, MP-1272
 BLOCKING PLATE □ 0M-324577
 FAN ⊕ B-1064
 MLC ▨ 0A-1423-5240
 POWER SUPPLY Ⓜ 0A-1327-0032
 MODULE □ 10.400" X 10.400"
 16 PIXEL X 16 PIXEL
 16MM C-C / 0.650" C-C

- ISAC BUSS RJ CABLES
- ⑥ 0A-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 - ⑩ 0A-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT
- FIBER CABLES (METERS)
- ① W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 - ③ W-1864... QC RIGHT TO CNTRLR J21, 80 WIDE TO 128 WIDE
 - ④ W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 272 WIDE
- NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

- PRIMARY ASSEMBLIES
- CONTROLLER ▨ 0A-1415-0001
 - QUICK CONNECT LEFT □ PRIMARY INPUT (REFER TO DWG-00410451)
 - QUICK CONNECT RIGHT □ PRIMARY OUTPUT (REFER TO DWG-00410451)
 - LIGHT DETECTOR ⊕ 0A-1327-3010
- MIRROR ASSEMBLIES
- QUICK CONNECT LEFT □ MIRROR INPUT (REFER TO DWG-00410451)
 - QUICK CONNECT BLANK □ 0A-1327-1027
 - BLANK LIGHT DETECTOR ⊕ 0A-1213-4009

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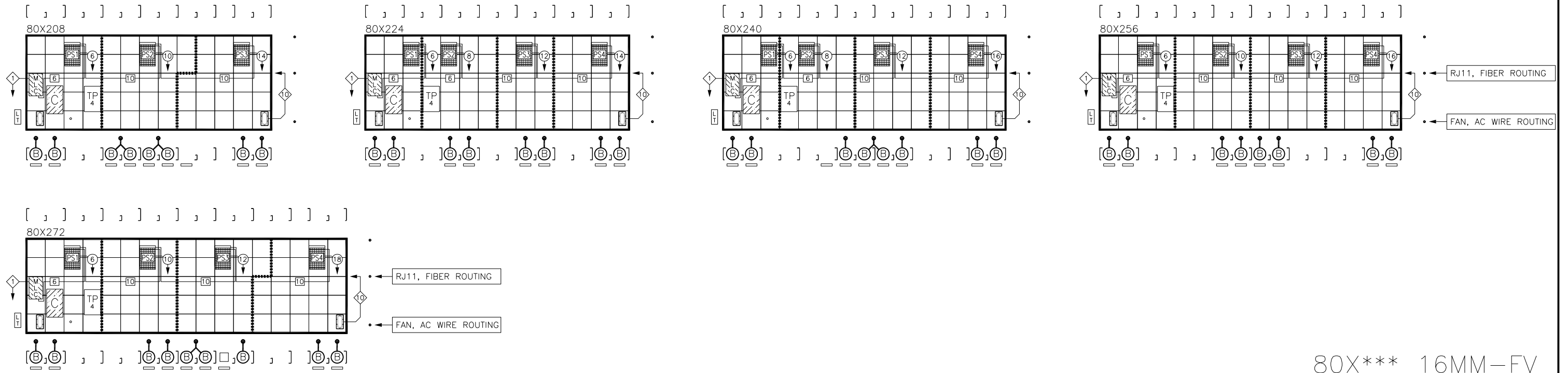
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-16MM REVOLUTION SERIES FV
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 DES. BY: LKERR DRAWN BY: LKERR DATE: 17 NOV 08

REVISION APPR. BY: SCALE: 1=55

1500-E10B-758199

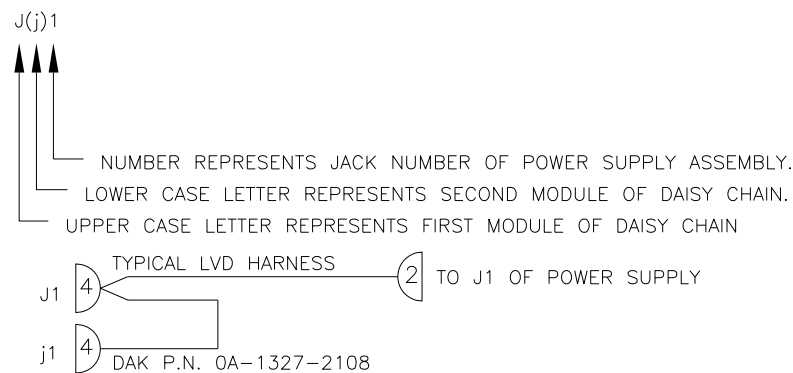
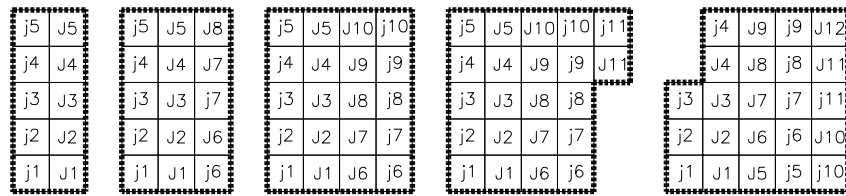
REV.	DATE	DESCRIPTION	BY	APPR.
01	17 JUN 09	ADDED BLOCKING PLATE UPDATED MLC PART NUMBER	ARH	



80X*** 16MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	*0021
2 (P7)	*0020
3 (P9)	*0018
4 (P11)	*0017
5 (P13)	*0017

(* ADD NUMBER TO 0A-1000-_____ FOR ENTIRE P.N.)
NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1500-R03B-728335 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1500-R10A-728263 FOR DISPLAY POWER SPECIFICATIONS.

SINGLE FAN HARNESS W-1666
DUAL FAN HARNESS OA-1327-2510

FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.

POWER TERM PANEL

120/240VAC, 1 PH	240VAC, 1 PH
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

...OA-1327-2062, 4 FT	...OA-1327-2013, 12 FT
...OA-1327-2010, 6 FT	...OA-1327-2014, 14 FT
...OA-1327-2011, 8 FT	...OA-1327-2015, 16 FT
...OA-1327-2012, 10 FT	...OA-1327-2016, 18 FT

AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.

WIRE SUPPORT ICON IDENTIFIES THE WIRE SUPPORT LOCATION

J-BOX SEE BOM
PLUG HS-1558
FILTER EN-2310, MP-1272
BLOCKING PLATE OM-324577
FAN B-1064
MLC OA-1423-5240
POWER SUPPLY OA-1327-0032
MODULE 10.400" X 10.400"
16 PIXEL X 16 PIXEL
16MM C-C / 0.650" C-C

ISAC BUSS RJ CABLES
 OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
 W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 W-1864... QC RIGHT TO CNTRLR J21, 80 WIDE TO 128 WIDE
 W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 272 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES

- CONTROLLER OA-1415-0001
QUICK CONNECT LEFT PRIMARY INPUT (REFER TO DWG-00410451)
QUICK CONNECT RIGHT PRIMARY OUTPUT (REFER TO DWG-00410451)
LIGHT DETECTOR OA-1327-3010

MIRROR ASSEMBLIES

- QUICK CONNECT LEFT MIRROR INPUT (REFER TO DWG-00410451)
QUICK CONNECT BLANK OA-1327-1027
BLANK LIGHT DETECTOR OA-1213-4009

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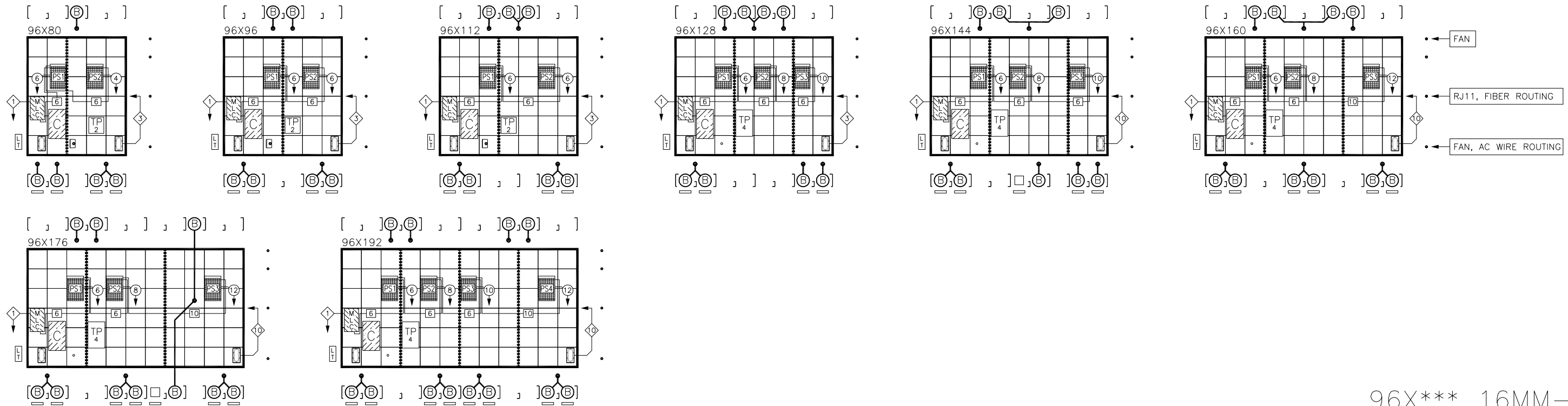
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-16MM REVOLUTION SERIES FV
TITLE: ELECT LAYOUT, GPR-80X(208-272)-16-RGB-P/M 20F2
DES. BY: LKERR DRAWN BY: LKERR DATE: 17 NOV 08

REVISION	APPR. BY:	SCALE:
01	LKERR	1=55

1500-E10B-758347

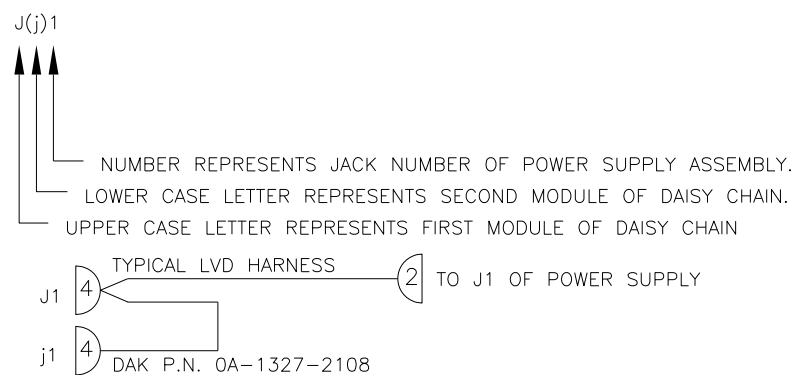
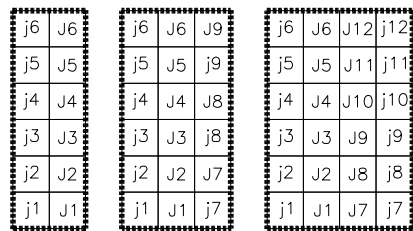
REV.	DATE	DESCRIPTION	BY	APPR.
01	17 JUN 09	ADDED BLOCKING PLATE UPDATED MLC PART NUMBER	ARH	



96X*** 16MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



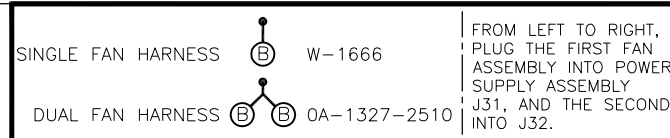
RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	*0022
2 (P7)	*0021
3 (P9)	*0020
4 (P11)	*0018
5 (P13)	*0017
6 (P16)	*0017

(* ADD NUMBER TO OA-1000-_____ FOR ENTIRE P.N.)
NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

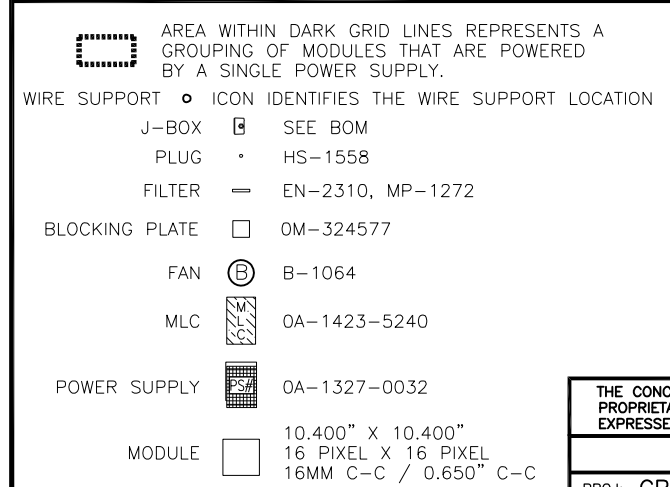
NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1500-R03B-728335 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1500-R10A-728263 FOR DISPLAY POWER SPECIFICATIONS.



POWER TERM PANEL TP#	
<u>120/240VAC, 1 PH</u>	<u>240VAC, 1 PH</u>
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES	
④...OA-1327-2062, 4 FT	⑫...OA-1327-2013, 12 FT
⑥...OA-1327-2010, 6 FT	⑭...OA-1327-2014, 14 FT
⑧...OA-1327-2011, 8 FT	⑯...OA-1327-2015, 16 FT
⑩...OA-1327-2012, 10 FT	⑰...OA-1327-2016, 18 FT



ISAC BUSS RJ CABLES
⑥ OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
⑩ OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
① W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
③ W-1864... QC RIGHT TO CNTRLR J21, 80 WIDE TO 128 WIDE
④ W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 272 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES	
CONTROLLER	OA-1415-0001
QUICK CONNECT LEFT	PRIMARY INPUT (REFER TO DWG-00410451)
QUICK CONNECT RIGHT	PRIMARY OUTPUT (REFER TO DWG-00410451)
LIGHT DETECTOR	OA-1327-3010

MIRROR ASSEMBLIES	
QUICK CONNECT LEFT	MIRROR INPUT (REFER TO DWG-00410451)
QUICK CONNECT BLANK	OA-1327-1027
BLANK LIGHT DETECTOR	OA-1213-4009

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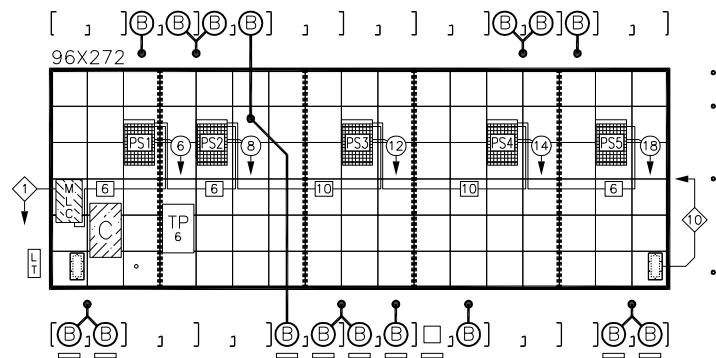
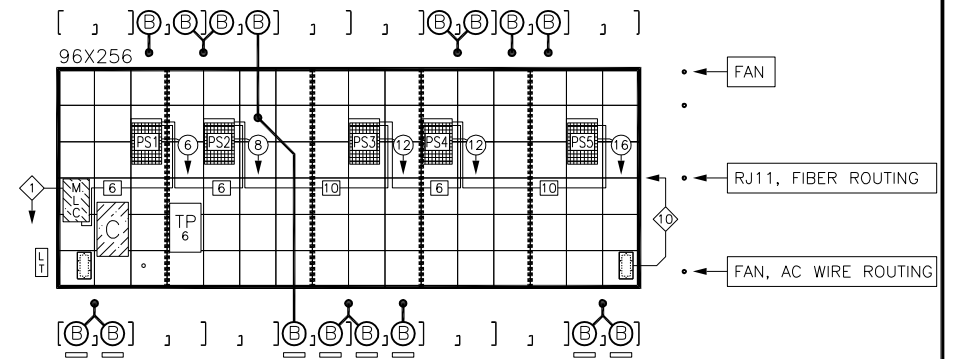
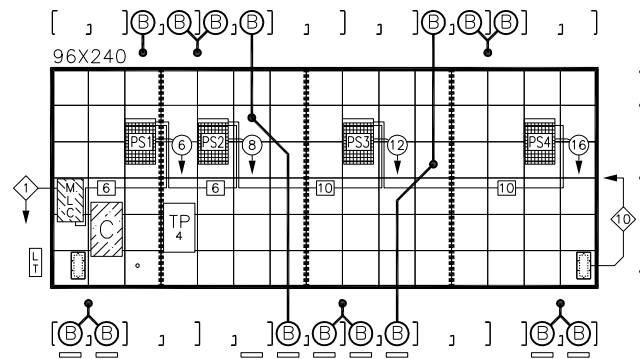
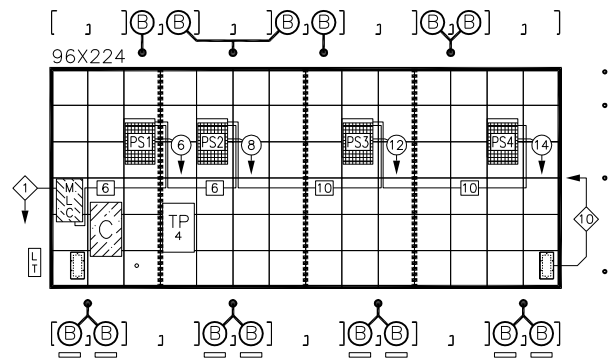
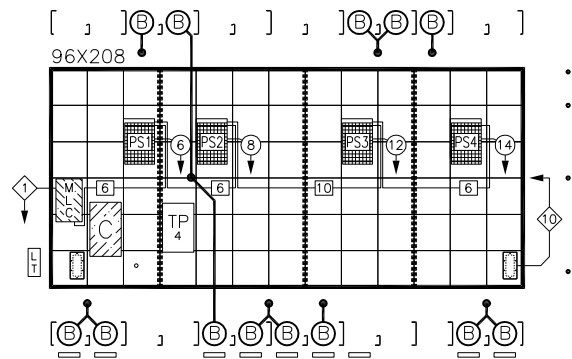
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-16MM REVOLUTION SERIES FV
TITLE: ELECT LAYOUT, GPR-96X(80-192)-16-RGB-P/M 10F2
DES. BY: LKERR DRAWN BY: LKERR DATE: 17 NOV 08

REVISION	APPR. BY:	SCALE:
01	LKERR	1=55

1500-E10B-758424

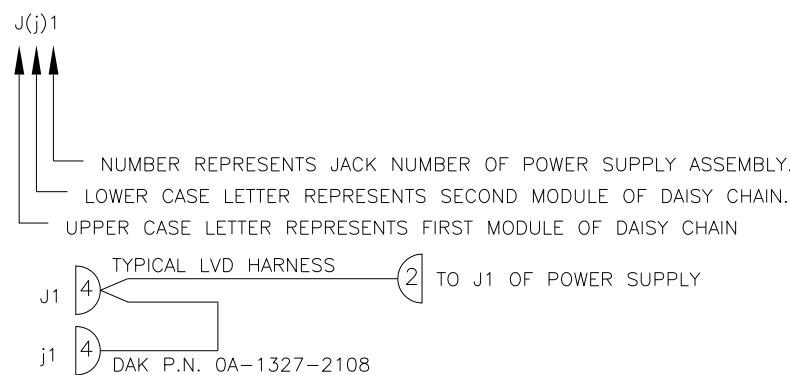
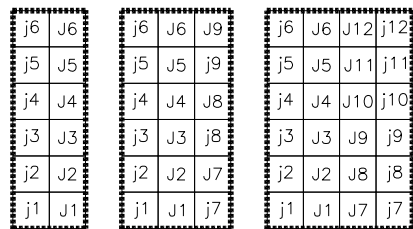
REV.	DATE	DESCRIPTION	BY	APPR.
01	17 JUN 09	ADDED BLOCKING PLATE UPDATED MLC PART NUMBER	ARH	



96X*** 16MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	*0022
2 (P7)	*0021
3 (P9)	*0020
4 (P11)	*0018
5 (P13)	*0017
6 (P16)	*0017

(* ADD NUMBER TO 0A-1000-_____ FOR ENTIRE P.N.)
NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1500-R03B-728335 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1500-R10A-728263 FOR DISPLAY POWER SPECIFICATIONS.

SINGLE FAN HARNESS W-1666
DUAL FAN HARNESS 0A-1327-2510

FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.

POWER TERM PANEL

120/240VAC, 1 PH	240VAC, 1 PH
0A-1327-0120 (1CKT)	0A-1327-0122 (1CKT)
0A-1327-0121 (2CKT)	0A-1327-0123 (2CKT)
0A-1327-0137 (4CKT)	0A-1327-0139 (4CKT)
0A-1327-0136 (6CKT)	0A-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

④...0A-1327-2062, 4 FT	⑫...0A-1327-2013, 12 FT
⑥...0A-1327-2010, 6 FT	⑭...0A-1327-2014, 14 FT
⑧...0A-1327-2011, 8 FT	⑯...0A-1327-2015, 16 FT
⑩...0A-1327-2012, 10 FT	⑰...0A-1327-2016, 18 FT

AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.

WIRE SUPPORT ICON IDENTIFIES THE WIRE SUPPORT LOCATION

J-BOX SEE BOM
PLUG HS-1558
FILTER EN-2310, MP-1272
BLOCKING PLATE 0M-324577
FAN B-1064
MLC 0A-1423-5240
POWER SUPPLY 0A-1327-0032
MODULE 10.400" X 10.400"
16 PIXEL X 16 PIXEL
16MM C-C / 0.650" C-C

ISAC BUSS RJ CABLES
⑥ 0A-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
⑩ 0A-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
① W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
③ W-1864... QC RIGHT TO CNTRLR J21, 80 WIDE TO 128 WIDE
④ W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 272 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES

CONTROLLER 0A-1415-0001

QUICK CONNECT LEFT PRIMARY INPUT (REFER TO DWG-00410451)

QUICK CONNECT RIGHT PRIMARY OUTPUT (REFER TO DWG-00410451)

LIGHT DETECTOR 0A-1327-3010

MIRROR ASSEMBLIES

QUICK CONNECT LEFT MIRROR INPUT (REFER TO DWG-00410451)

QUICK CONNECT BLANK 0A-1327-1027

BLANK LIGHT DETECTOR 0A-1213-4009

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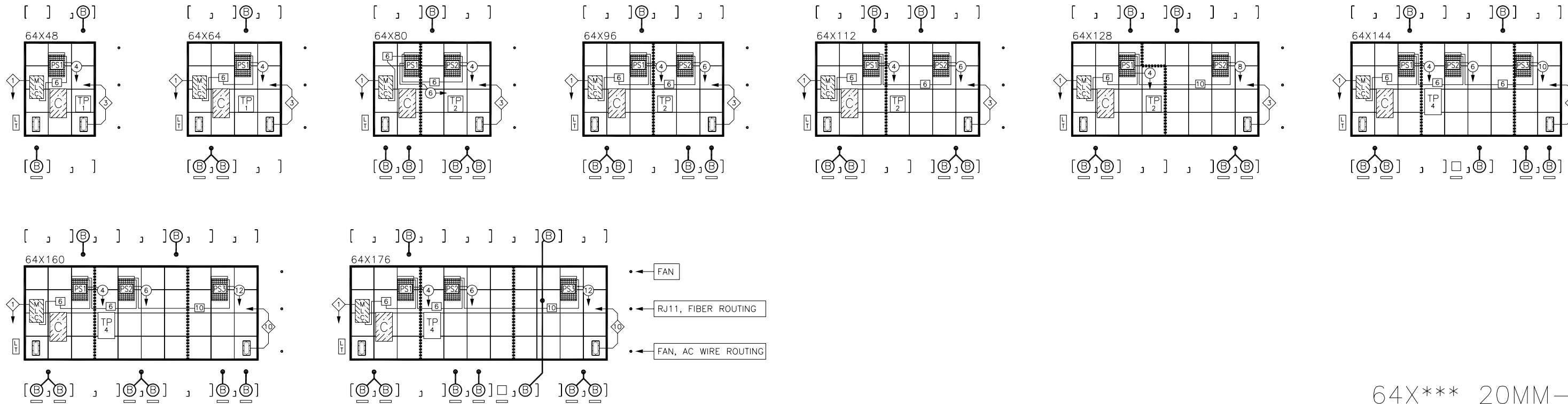
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-16MM REVOLUTION SERIES FV
TITLE: ELECT LAYOUT, GPR 96X(208-272)-16-RGB-P/M 20F2
DES. BY: LKERR DRAWN BY: LKERR DATE: 17 NOV 08

REVISION 01 APPR. BY: SCALE: 1=55

1500-E10B-758427

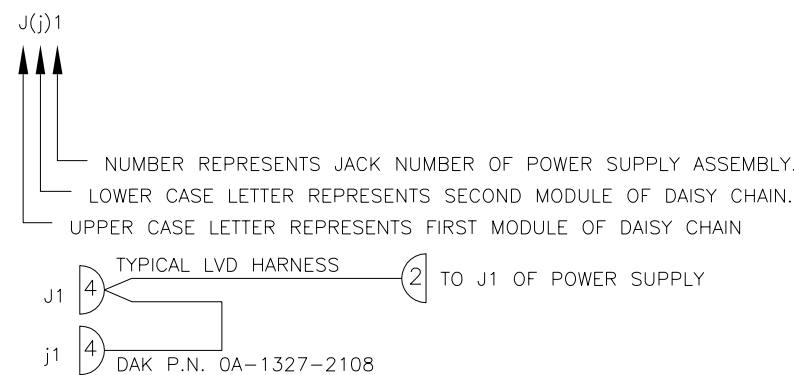
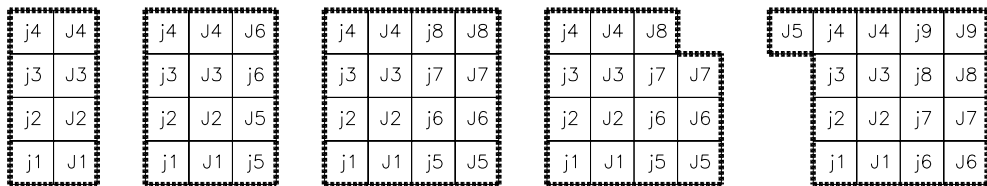
REV.	DATE	DESCRIPTION	BY	APPR.
01	17 JUN 09	ADDED BLOCKING PLATE UPDATED MLC PART NUMBER	ARH	



64X*** 20MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	*0021
2 (P7)	*0019
3 (P9)	*0017
4 (P11)	*0017

(* ADD NUMBER TO OA-1000-____ FOR ENTIRE P.N.)
 NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1479-R03B-709648 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1479-R10A-707340 FOR DISPLAY POWER SPECIFICATIONS.

FILTER = EN-2310, MP-1272
 FAN (B) B-1064
 MLC (Hatched) OP-1273-0060
 POWER SUPPLY (PS) OA-1327-0032
 MODULE (Square) 12.480" X 12.480" 16 PIXEL X 16 PIXEL 20MM C-C / 0.780" C-C
 AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.
 WIRE SUPPORT (Circle with dot) ICON IDENTIFIES THE WIRE SUPPORT LOCATION

SINGLE FAN HARNESS (B) W-1666 FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.
 DUAL FAN HARNESS (B)(B) OA-1327-2510

POWER TERM PANEL (TP #)	
120/240VAC, 1 PH	240VAC, 1 PH
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

(4) OA-1327-2062, 4 FT	(12) OA-1327-2013, 12 FT
(6) OA-1327-2010, 6 FT	(14) OA-1327-2014, 14 FT
(8) OA-1327-2011, 8 FT	(16) OA-1327-2015, 16 FT
(10) OA-1327-2012, 10 FT	(18) OA-1327-2016, 18 FT

ISAC BUSS RJ CABLES
 (6) OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 (10) OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
 (1) W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 (3) W-1864... QC RIGHT TO CNTRLR J21, 48 WIDE TO 128 WIDE
 (10) W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 256 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES

CONTROLLER (C) OA-1415-0001
 QUICK CONNECT LEFT (Q) PRIMARY INPUT (REFER TO DWG-00410451)
 QUICK CONNECT RIGHT (Q) PRIMARY OUTPUT (REFER TO DWG-00410451)
 LIGHT DETECTOR (L) OA-1327-3010

MIRROR ASSEMBLIES

QUICK CONNECT LEFT (Q) MIRROR INPUT (REFER TO DWG-00410451)
 QUICK CONNECT BLANK (Q) OA-1327-1027
 BLANK LIGHT DETECTOR (L) OA-1213-4009

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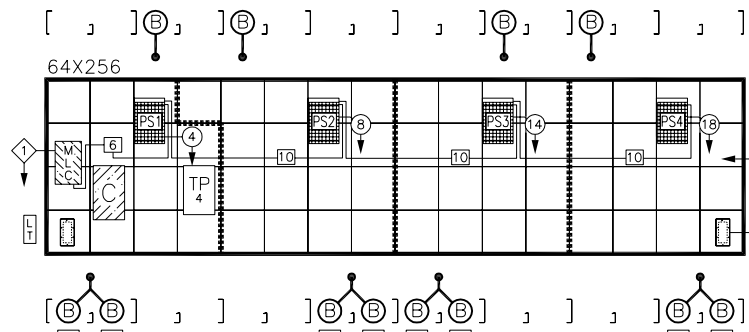
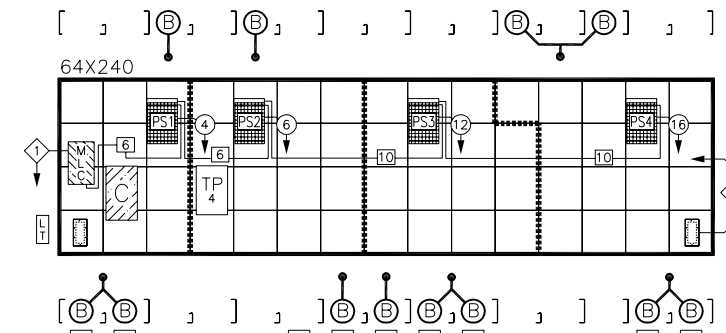
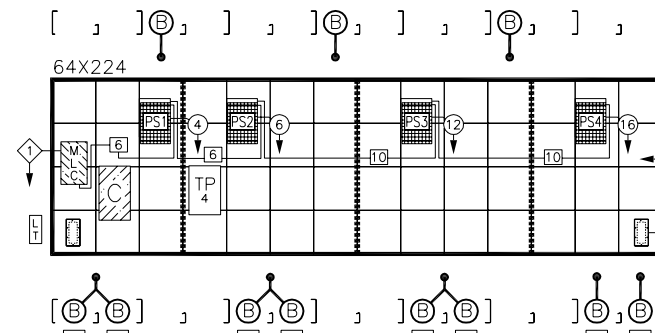
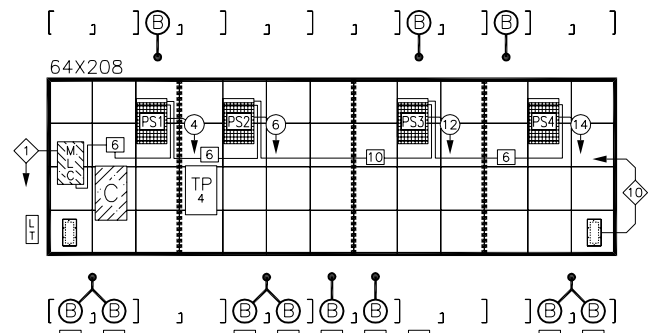
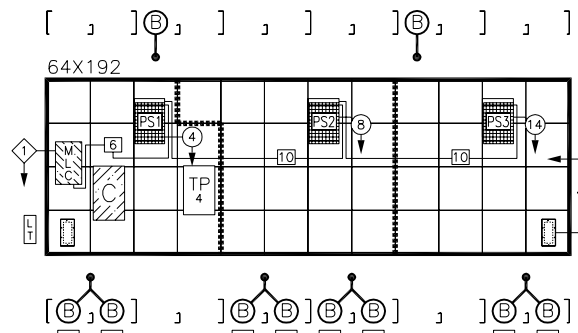
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-20MM REVOLUTION SERIES FV
 TITLE: ELECT LAYOUT; GPR-64X(48-176)-20-RGB-P/M 10F2
 DES. BY: LKERR DRAWN BY: DMATHER DATE: 03 OCT 08

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 NOV 08	CHANGED OA-1327-0030 TO OA-1327-0032	DCARR	

REVISION 01 APPR. BY: SCALE: 1=55

1479-E10B-720642

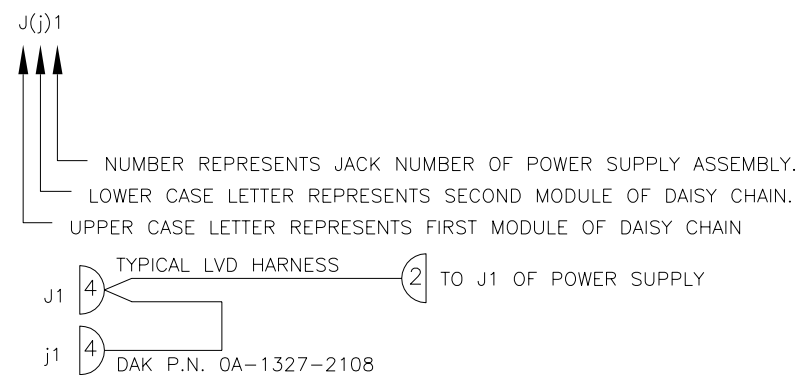
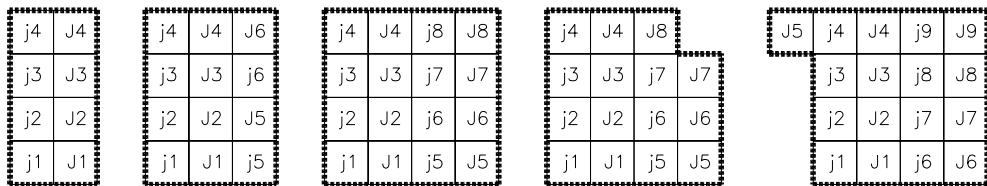


- ← FAN
- ← RJ11, FIBER ROUTING
- ← FAN, AC WIRE ROUTING

64X*** 20MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

MLC TO 1ST MODULE	P.N.
1 (P4)	*0021
2 (P7)	*0019
3 (P9)	*0017
4 (P11)	*0017

(* ADD NUMBER TO 0A-1000-____ FOR ENTIRE P.N.)
 NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1479-R03B-709648 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1479-R10A-707340 FOR DISPLAY POWER SPECIFICATIONS.

FILTER = EN-2310, MP-1272
 FAN (B) B-1064
 MLC (C) OP-1273-0060
 POWER SUPPLY (PS) OA-1327-0032
 MODULE () 12.480" X 12.480" 16 PIXEL X 16 PIXEL 20MM C-C / 0.780" C-C

AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.

WIRE SUPPORT (O) ICON IDENTIFIES THE WIRE SUPPORT LOCATION

SINGLE FAN HARNESS (B) W-1666 FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.
 DUAL FAN HARNESS (B)(B) OA-1327-2510

POWER TERM PANEL (TP #)	
120/240VAC, 1 PH	240VAC, 1 PH
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

(4)...OA-1327-2062, 4 FT	(12)...OA-1327-2013, 12 FT
(6)...OA-1327-2010, 6 FT	(14)...OA-1327-2014, 14 FT
(8)...OA-1327-2011, 8 FT	(16)...OA-1327-2015, 16 FT
(10)...OA-1327-2012, 10 FT	(18)...OA-1327-2016, 18 FT

ISAC BUSS RJ CABLES
 (6) OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 (10) OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
 (1) W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 (3) W-1864... QC RIGHT TO CNTRLR J21, 48 WIDE TO 128 WIDE
 (10) W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 256 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

- PRIMARY ASSEMBLIES
- CONTROLLER (C) OA-1415-0001
 - QUICK CONNECT LEFT (B) PRIMARY INPUT (REFER TO DWG-00410451)
 - QUICK CONNECT RIGHT (B) PRIMARY OUTPUT (REFER TO DWG-00410451)
 - LIGHT DETECTOR (L) OA-1327-3010
- MIRROR ASSEMBLIES
- QUICK CONNECT LEFT (B) MIRROR INPUT (REFER TO DWG-00410451)
 - QUICK CONNECT BLANK (B) OA-1327-1027
 - BLANK LIGHT DETECTOR (L) OA-1213-4009

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GPR-20MM REVOLUTION SERIES FV

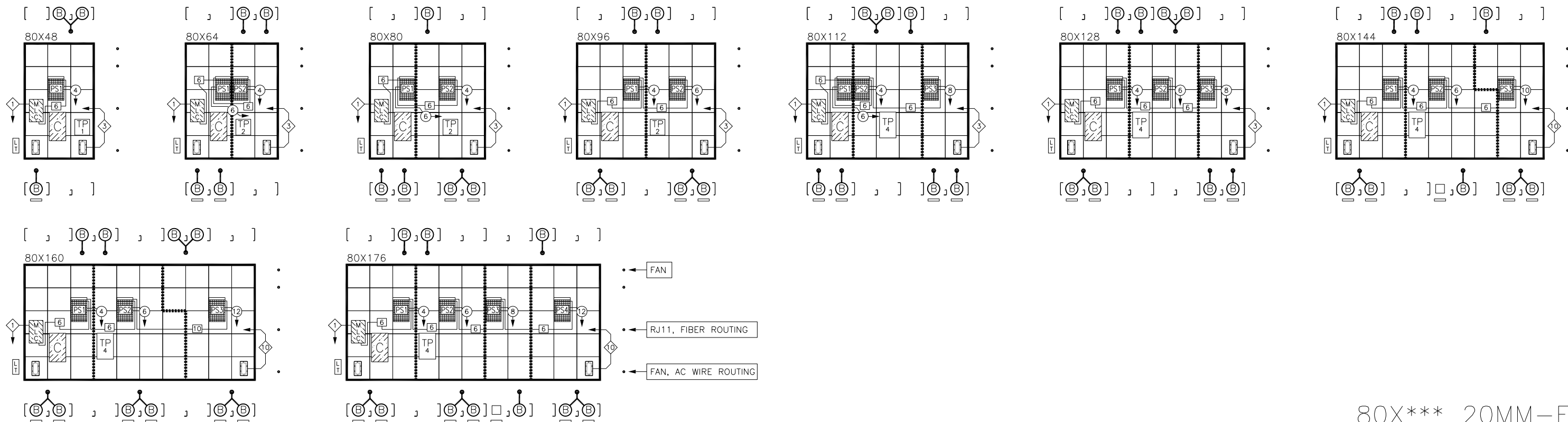
TITLE: ELECT LAYOUT; GPR-64X(192-256)-20-RGB-P/M 20F2

DES. BY: LKERR DRAWN BY: DMATHER DATE: 03 OCT 08

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 NOV 08	CHANGED OA-1327-0030 TO OA-1327-0032	DCARR	

REVISION 01 APPR. BY: SCALE: 1=55

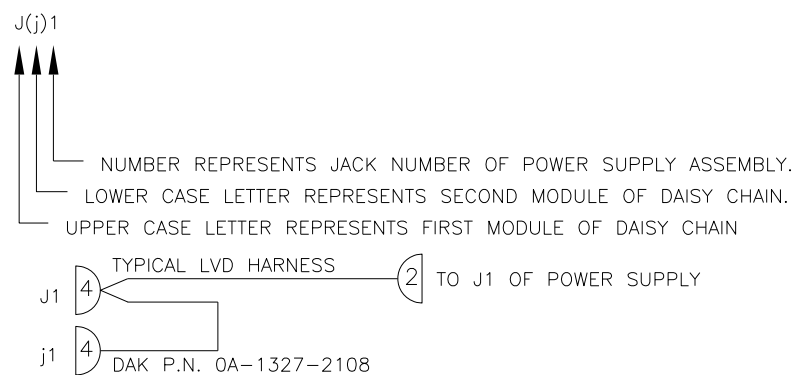
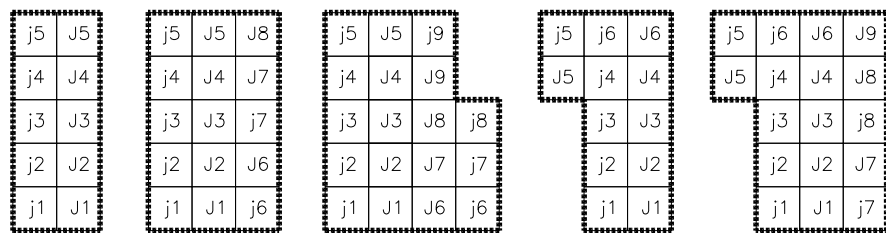
1479-E10B-720643



80X*** 20MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	W-1678
2 (P7)	*0021
3 (P9)	*0019
4 (P11)	*0017
5 (P13)	*0017

(* ADD NUMBER TO OA-1000-____ FOR ENTIRE P.N.)
 NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1479-R03B-709648 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1479-R10A-707340 FOR DISPLAY POWER SPECIFICATIONS.

FILTER — EN-2310, MP-1272
 FAN (B) B-1064
 MLC (M) OP-1273-0060
 POWER SUPPLY (PS) OA-1327-0032
 MODULE (C) 12.480" X 12.480" 16 PIXEL X 16 PIXEL 20MM C-C / 0.780" C-C
 WIRE SUPPORT (O) ICON IDENTIFIES THE WIRE SUPPORT LOCATION

SINGLE FAN HARNESS (B) W-1666 FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.
 DUAL FAN HARNESS (B) OA-1327-2510

POWER TERM PANEL (TP #)	
120/240VAC, 1 PH	240VAC, 1 PH
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

(4)...OA-1327-2062, 4 FT	(12)...OA-1327-2013, 12 FT
(6)...OA-1327-2010, 6 FT	(14)...OA-1327-2014, 14 FT
(8)...OA-1327-2011, 8 FT	(16)...OA-1327-2015, 16 FT
(10)...OA-1327-2012, 10 FT	(18)...OA-1327-2016, 18 FT

ISAC BUSS RJ CABLES
 (6) OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 (10) OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
 (1) W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 (3) W-1864... QC RIGHT TO CNTRLR J21, 48 WIDE TO 128 WIDE
 (10) W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 256 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES

CONTROLLER (C)	OA-1415-0001
QUICK CONNECT LEFT (Q)	PRIMARY INPUT (REFER TO DWG-00410451)
QUICK CONNECT RIGHT (R)	PRIMARY OUTPUT (REFER TO DWG-00410451)
LIGHT DETECTOR (L)	OA-1327-3010

MIRROR ASSEMBLIES

QUICK CONNECT LEFT (Q)	MIRROR INPUT (REFER TO DWG-00410451)
QUICK CONNECT BLANK (B)	OA-1327-1027
BLANK LIGHT DETECTOR (L)	OA-1213-4009

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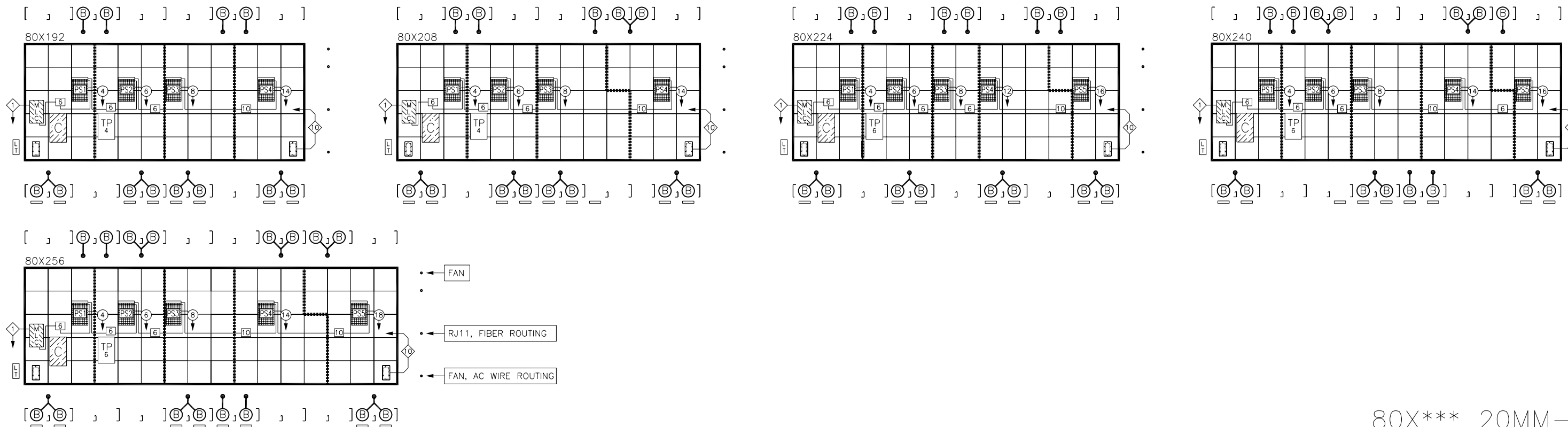
PROJ: GPR-20MM REVOLUTION SERIES FV
 TITLE: ELECT LAYOUT; GPR-80X(48-176)-20-RGB-P/M 10F2

DES. BY: LKERR DRAWN BY: DMATHER DATE: 03 OCT 08

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 NOV 08	CHANGED OA-1327-0030 TO OA-1327-0032	DCARR	

REVISION 01 APPR. BY: SCALE: 1=55

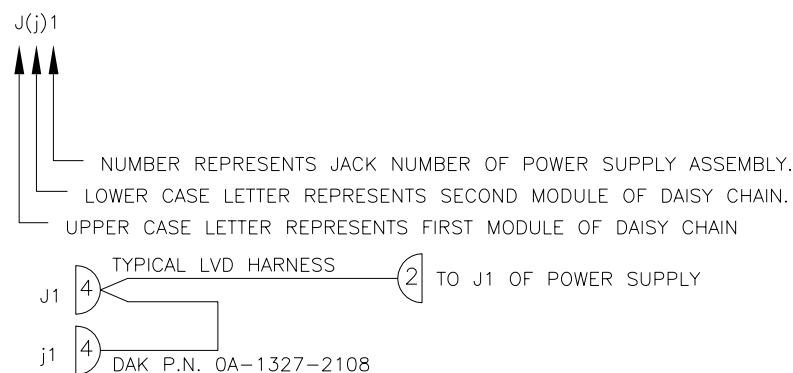
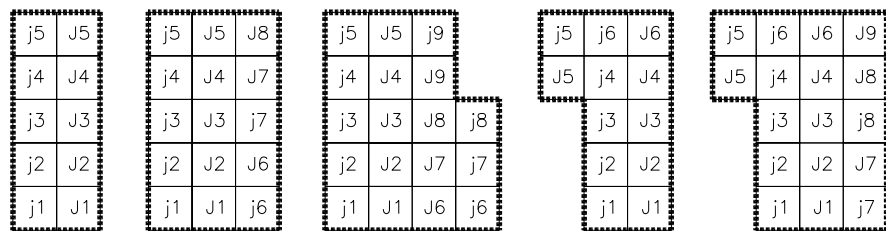
1479-E10B-720644



80X*** 20MM-FV

DETAIL: A

NOTE: EXAMPLES BELOW SHOW MODULE/POWER SUPPLY GROUPINGS USED IN ALL DISPLAY SIZES. POWER SUPPLY MAY HAVE MULTIPLE LOCATIONS WITHIN GROUPING. REFER TO ABOVE LAYOUTS.



RIBBON CABLE CHART

LINE P#	P.N.
1 (P4)	W-1678
2 (P7)	*0021
3 (P9)	*0019
4 (P11)	*0017
5 (P13)	*0017

(* ADD NUMBER TO OA-1000-____ FOR ENTIRE P.N.)
 NOTE: ALL RIBBON CABLES BETWEEN MODULES ARE W-1387.

NOTES:

- REFER TO GENERAL SCHEMATIC DRAWING 1479-R03B-709648 FOR POINT TO POINT WIRING DETAIL.
- REFER TO CONTROLLER/MLC SCHEMATIC DRAWING 1415-R03B-380351 FOR COMMUNICATION WIRING DETAIL.
- REFER TO FIBER ROUTING DRAWING 1466-R01B-370744 FOR INTERNAL DISPLAY FIBER CONNECTION DETAIL.
- REFER TO POWER SPEC. DRAWING 1479-R10A-707340 FOR DISPLAY POWER SPECIFICATIONS.

FILTER = EN-2310, MP-1272
 FAN (B) B-1064
 MLC (C) OP-1273-0060
 POWER SUPPLY (PS) OA-1327-0032
 MODULE (M) 12.480" X 12.480" 16 PIXEL X 16 PIXEL 20MM C-C / 0.780" C-C
 AREA WITHIN DARK GRID LINES REPRESENTS A GROUPING OF MODULES THAT ARE POWERED BY A SINGLE POWER SUPPLY.
 WIRE SUPPORT (O) ICON IDENTIFIES THE WIRE SUPPORT LOCATION

SINGLE FAN HARNESS (B) W-1666 FROM LEFT TO RIGHT, PLUG THE FIRST FAN ASSEMBLY INTO POWER SUPPLY ASSEMBLY J31, AND THE SECOND INTO J32.
 DUAL FAN HARNESS (B) OA-1327-2510

POWER TERM PANEL (TP #)	
120/240VAC, 1 PH	240VAC, 1 PH
OA-1327-0120 (1CKT)	OA-1327-0122 (1CKT)
OA-1327-0121 (2CKT)	OA-1327-0123 (2CKT)
OA-1327-0137 (4CKT)	OA-1327-0139 (4CKT)
OA-1327-0136 (6CKT)	OA-1327-0138 (6CKT)

POWER SUPPLY HARNESSES

④...OA-1327-2062, 4 FT	⑬...OA-1327-2013, 12 FT
⑥...OA-1327-2010, 6 FT	⑭...OA-1327-2014, 14 FT
⑧...OA-1327-2011, 8 FT	⑯...OA-1327-2015, 16 FT
⑩...OA-1327-2012, 10 FT	⑰...OA-1327-2016, 18 FT

ISAC BUSS RJ CABLES
 (6) OA-1222-2103..... CABLE, RJ11 TO RJ11, STRT, 6 FT
 (10) OA-1222-2109..... CABLE, RJ11 TO RJ11, STRT, 10 FT

FIBER CABLES (METERS)
 (1) W-1659... MLC J23 TO CNTRLR J20 OR QC LEFT
 (3) W-1864... QC RIGHT TO CNTRLR J21, 48 WIDE TO 128 WIDE
 (10) W-1685... QC RIGHT TO CNTRLR J21, 144 WIDE TO 256 WIDE

NOTE: THE DIFFERENCES BETWEEN A MIRROR AND A PRIMARY DISPLAY ARE IN THE QUICK CONNECTS, THE LIGHT SENSOR, AND THE CONTROLLER. A PRIMARY HAS A CONTROLLER WHILE THE MIRROR DOES NOT. SEE LEGENDS FOR ASSEMBLY NUMBERS.

PRIMARY ASSEMBLIES

- CONTROLLER (C) OA-1415-0001
- QUICK CONNECT LEFT (Q) PRIMARY INPUT (REFER TO DWG-00410451)
- QUICK CONNECT RIGHT (Q) PRIMARY OUTPUT (REFER TO DWG-00410451)
- LIGHT DETECTOR (L) OA-1327-3010

MIRROR ASSEMBLIES

- QUICK CONNECT LEFT (Q) MIRROR INPUT (REFER TO DWG-00410451)
- QUICK CONNECT BLANK (Q) OA-1327-1027
- BLANK LIGHT DETECTOR (L) OA-1213-4009

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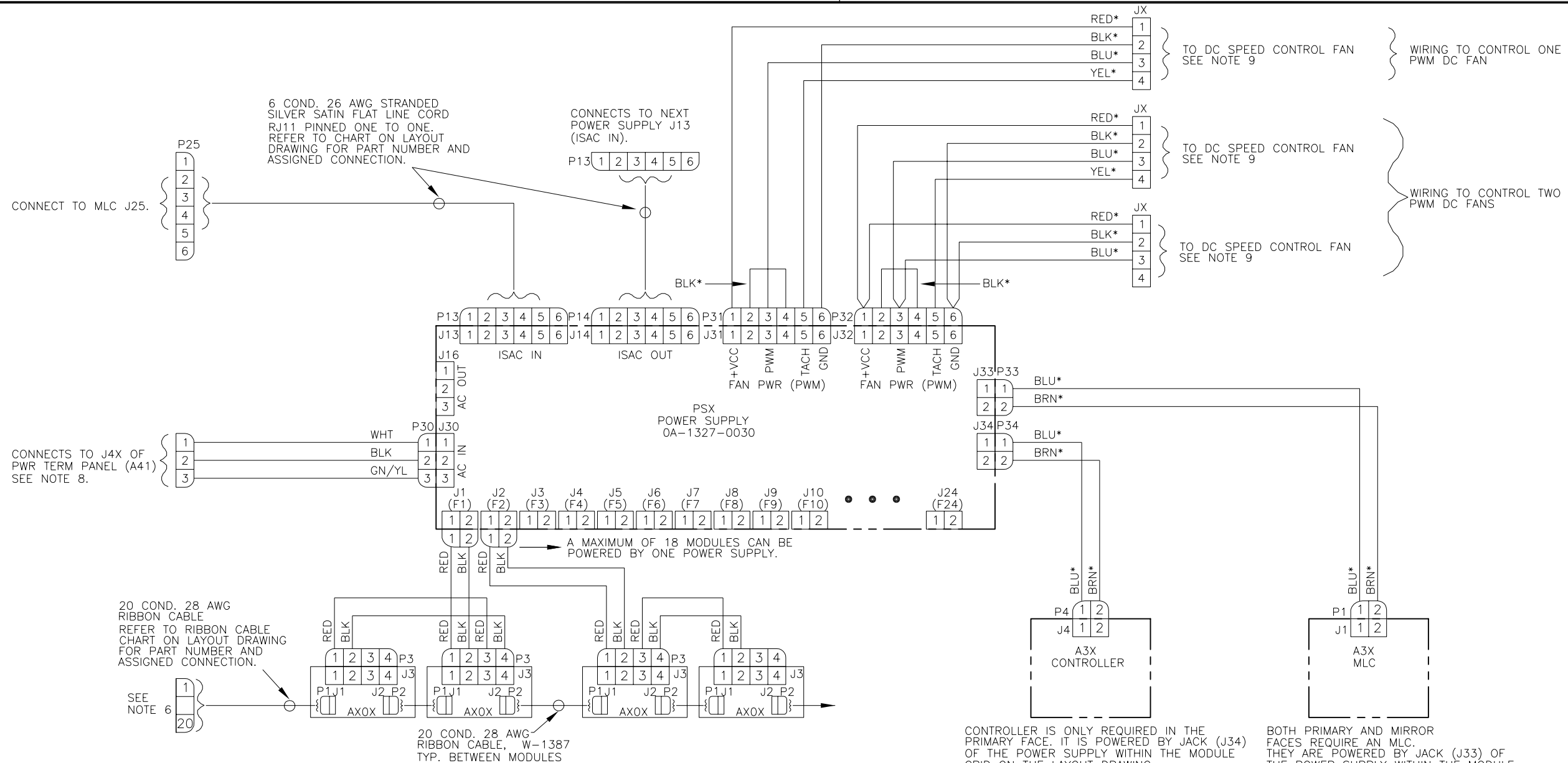
PROJ: GPR-20MM REVOLUTION SERIES FV

TITLE: ELECT LAYOUT; GPR-80X(192-256)-20-RGB-P/M 20F2

DES. BY: LKERR DRAWN BY: DMATHER DATE: 03 OCT 08

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 NOV 08	CHANGED OA-1327-0030 TO OA-1327-0032	DCARR	

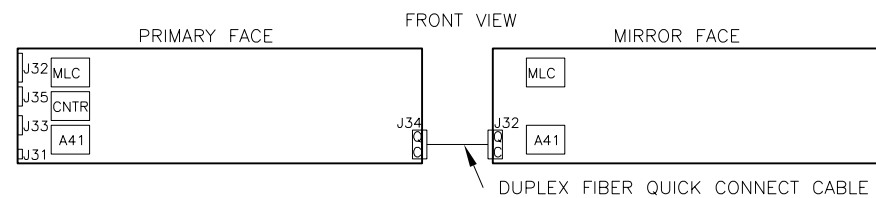
REVISION 01 APPR. BY: SCALE: 1=55 1479-E10B-720646



NOTES:

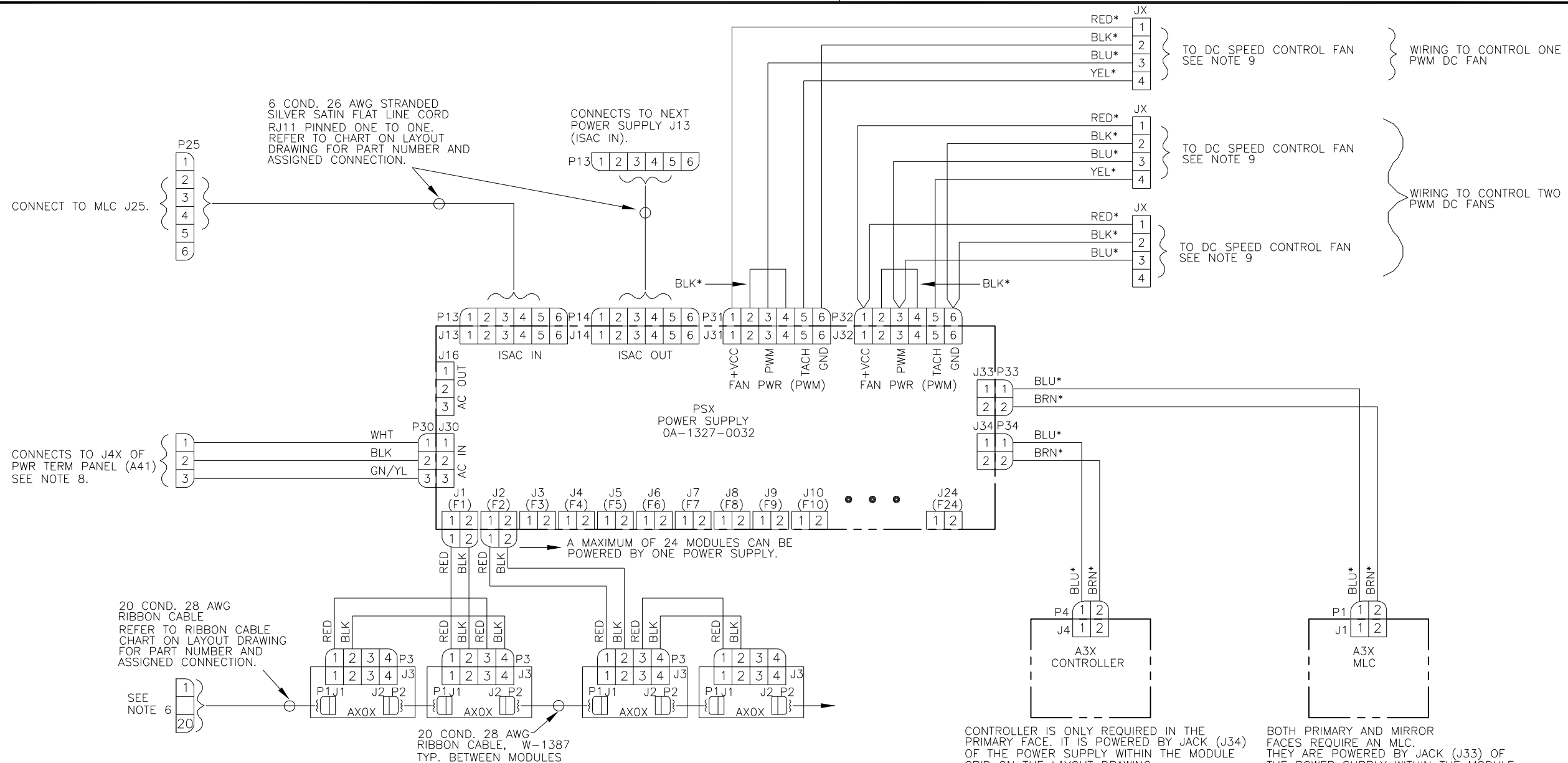
1. ALL WIRE IS 14 AWG EXCEPT * IS 18 AWG UNLESS OTHERWISE NOTED.
2. EACH LED MODULE IS A 24x24 MATRIX.
3. THE FRAME IS TO BE CONNECTED TO EARTH GROUND AT INSTALLATION TIME.
4. LED MODULE VOLTAGE IS 12.0 VDC.
5. F1-F24 ARE FUSES, ATC-15, 32V, 15 AMP AUTOMOTIVE. DAK P.N. (F-1048)
6. REFER TO DWG. B-380351 FOR CONTROLLER SIGNAL WIRING OF PRIMARY FACE AND MLC PIN OUTS.
7. REFER TO DWG. A-400539 FOR POWER SPECS.
8. AC HARNESS TO POWER SUPPLY SHOWN IS TYPICAL FOR ALL POWER SUPPLIES. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER. POWER SUPPLIES CONNECT TO POWER TERM PANEL IN NUMERICAL ORDER, I.E. J41 TO PS1, J42 TO PS2, ETC.
9. FANS ARE DC AND ARE POWERED BY THE POWER SUPPLY WITHIN THE MODULE GRID ON THE LAYOUT DRAWING. EACH POWER SUPPLY DISTRIBUTION BOARD HAS 2 FAN SPEED CONTROL OUTPUTS (J31 & J32). EACH OUTPUT CAN CONTROL UP TO 2 FANS. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER.

FIGURE 1:



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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: GALAXYPRO 12EV REVOLUTION SERIES			
TITLE: SCHEMATIC, GPR-12EV-FV-RGB, GENERAL			
DES. BY: LKERR	DRAWN BY: LKERR	DATE: 20 FEB 08	
REVISION	APPR. BY:	1466-R03B-360218	
00	SCALE: 1=1		

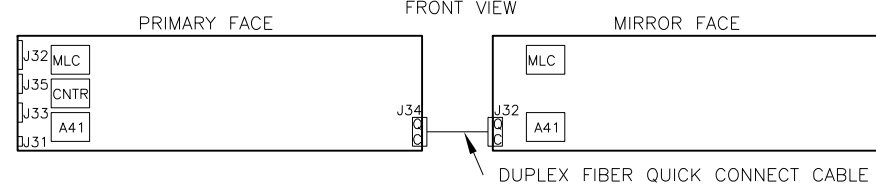
REV.	DATE	DESCRIPTION	BY	APPR.



NOTES:

1. ALL WIRE IS 14 AWG EXCEPT * IS 18 AWG UNLESS OTHERWISE NOTED.
2. EACH LED MODULE IS A 16x16 MATRIX.
3. THE FRAME IS TO BE CONNECTED TO EARTH GROUND AT INSTALLATION TIME.
4. LED MODULE VOLTAGE IS 12.0 VDC.
5. F1-F24 ARE FUSES, ATC-15, 32V, 15 AMP AUTOMOTIVE. DAK P.N. (F-1048)
6. REFER TO DWG. B-380351 FOR CONTROLLER SIGNAL WIRING OF PRIMARY FACE AND MLC PIN OUTS.
7. REFER TO DWG. A-728263 FOR POWER SPECS.
8. AC HARNESS TO POWER SUPPLY SHOWN IS TYPICAL FOR ALL POWER SUPPLIES. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER. POWER SUPPLIES CONNECT TO POWER TERM PANEL IN NUMERICAL ORDER, I.E. J41 TO PS1, J42 TO PS2, ETC.
9. FANS ARE DC AND ARE POWERED BY THE POWER SUPPLY WITHIN THE MODULE GRID ON THE LAYOUT DRAWING. EACH POWER SUPPLY DISTRIBUTION BOARD HAS 2 FAN SPEED CONTROL OUTPUTS (J31 & J32). EACH OUTPUT CAN CONTROL UP TO 2 FANS. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER.

FIGURE 1:



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PROJ: GALAXYPRO 16MM REVOLUTION SERIES

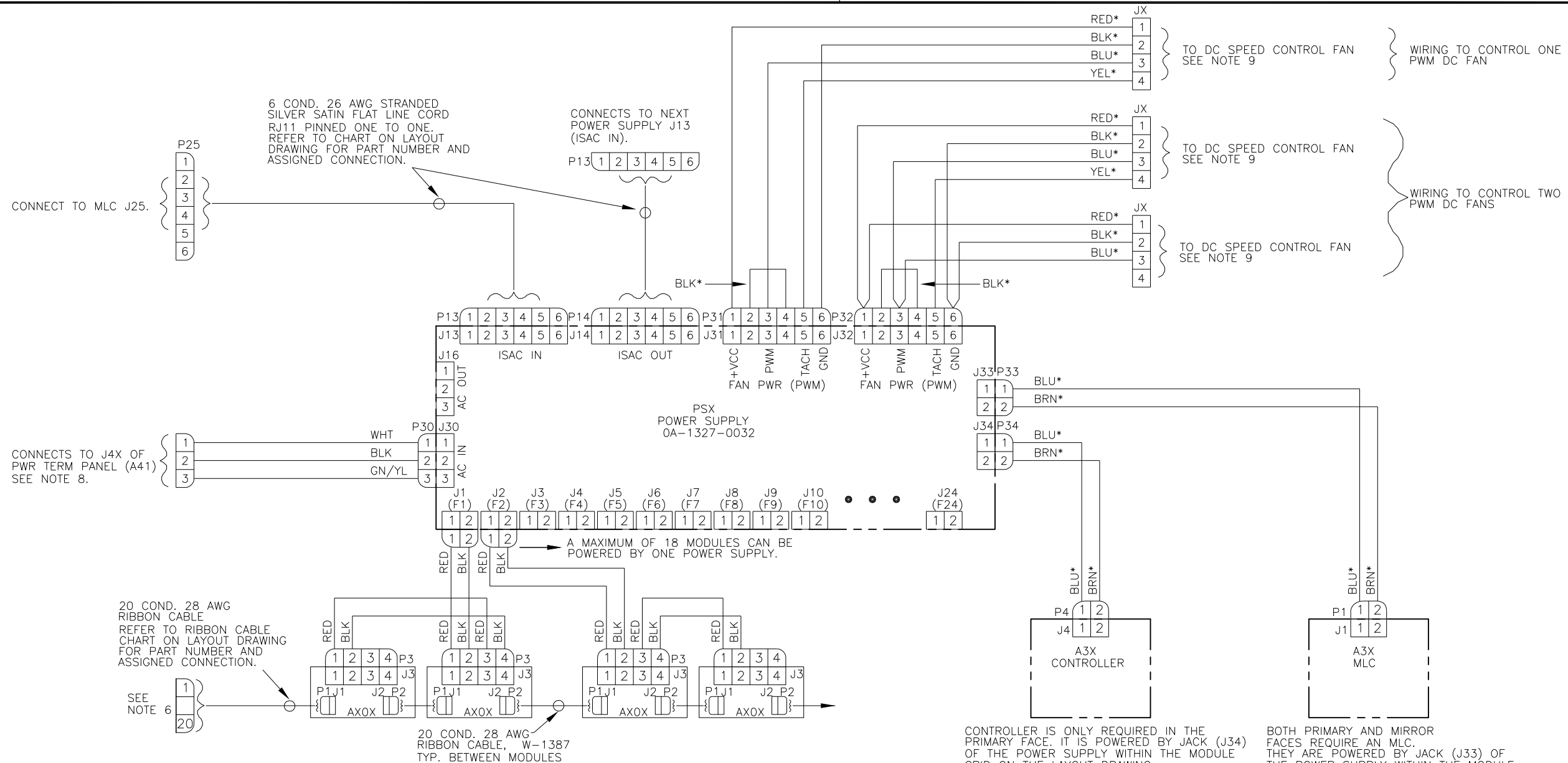
TITLE: SCHEMATIC, GPR-16MM-FV, GENERAL

DES. BY: LKERR DRAWN BY: LKERR DATE: 14 OCT 08

REVISION 00 APPR. BY: SCALE: 1=1

1500-R03B-728335

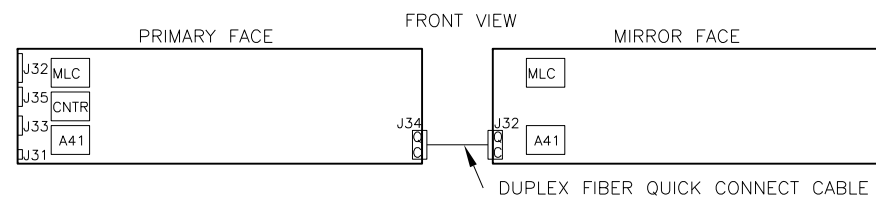
REV.	DATE	DESCRIPTION	BY	APPR.



NOTES:

1. ALL WIRE IS 14 AWG EXCEPT * IS 18 AWG UNLESS OTHERWISE NOTED.
2. EACH LED MODULE IS A 16x16 MATRIX.
3. THE FRAME IS TO BE CONNECTED TO EARTH GROUND AT INSTALLATION TIME.
4. LED MODULE VOLTAGE IS 12.0 VDC.
5. F1-F24 ARE FUSES, ATC-15, 32V, 15 AMP AUTOMOTIVE. DAK P.N. (F-1048)
6. REFER TO DWG. B-380351 FOR CONTROLLER SIGNAL WIRING OF PRIMARY FACE AND MLC PIN OUTS.
7. REFER TO DWG. A-707340 FOR POWER SPECS.
8. AC HARNESS TO POWER SUPPLY SHOWN IS TYPICAL FOR ALL POWER SUPPLIES. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER. POWER SUPPLIES CONNECT TO POWER TERM PANEL IN NUMERICAL ORDER, I.E. J41 TO PS1, J42 TO PS2, ETC.
9. FANS ARE DC AND ARE POWERED BY THE POWER SUPPLY WITHIN THE MODULE GRID ON THE LAYOUT DRAWING. EACH POWER SUPPLY DISTRIBUTION BOARD HAS 2 FAN SPEED CONTROL OUTPUTS (J31 & J32). EACH OUTPUT CAN CONTROL UP TO 2 FANS. REFER TO LAYOUT DRAWING FOR QTY. AND PART NUMBER.

FIGURE 1:



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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GALAXYPRO 20mm REVOLUTION SERIES

TITLE: SCHEMATIC, GPR-20mm-FV, GENERAL

DES. BY: LKERR APPR. BY: LKERR DATE: 25 SEP 08

REVISION 01 SCALE: 1=1

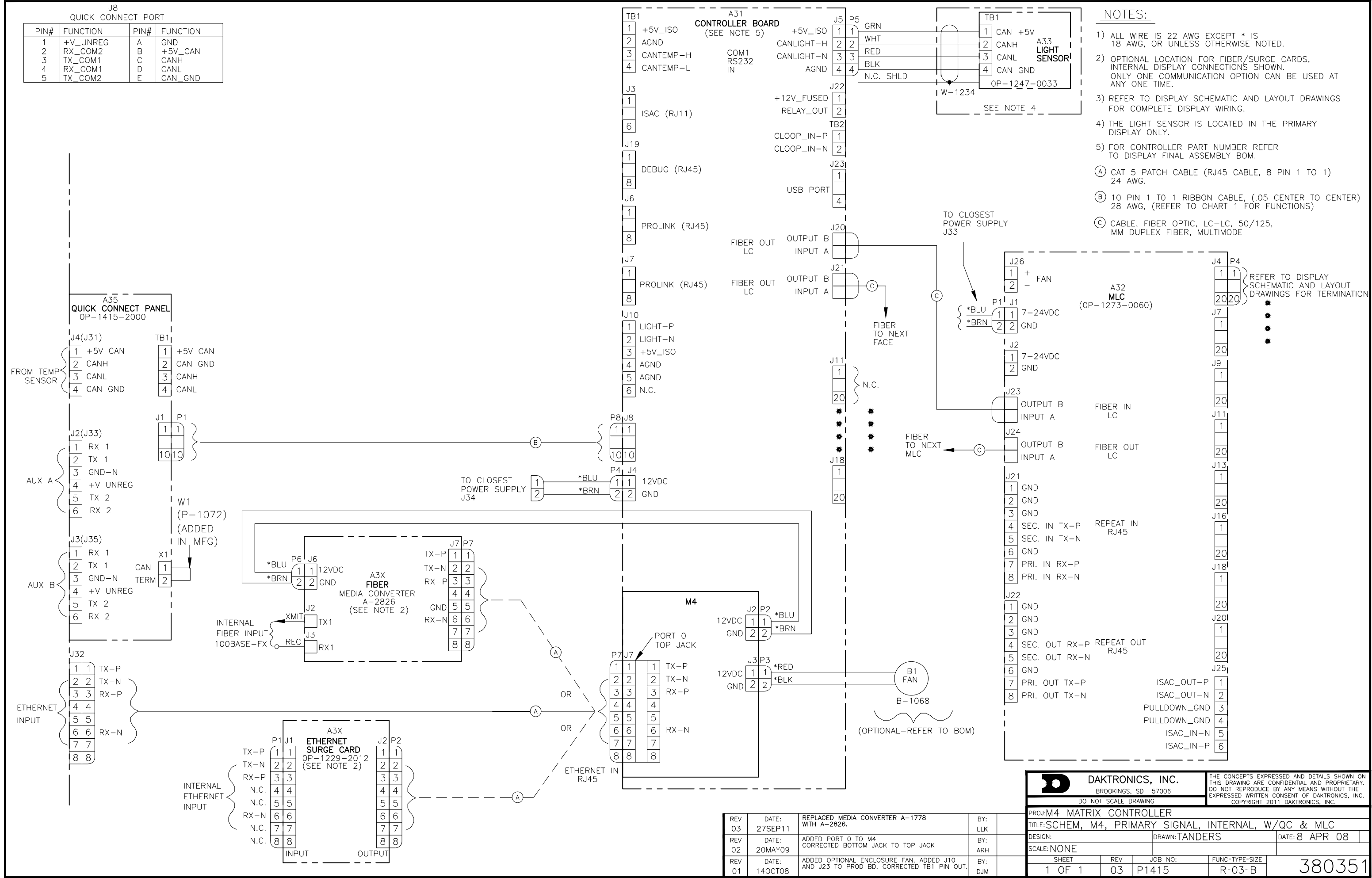
1479-R03B-709648

REV.	DATE	DESCRIPTION	BY	APPR.
01	10 JUN 09	UPDATED POWER SUPPLY PART NUMBER	ARH	

J8
QUICK CONNECT PORT

PIN#	FUNCTION	PIN#	FUNCTION
1	+V_UNREG	A	GND
2	RX_COM2	B	+5V_CAN
3	TX_COM1	C	CANH
4	RX_COM1	D	CANL
5	TX_COM2	E	CAN_GND

- NOTES:**
- 1) ALL WIRE IS 22 AWG EXCEPT * IS 18 AWG, OR UNLESS OTHERWISE NOTED.
 - 2) OPTIONAL LOCATION FOR FIBER/SURGE CARDS, INTERNAL DISPLAY CONNECTIONS SHOWN. ONLY ONE COMMUNICATION OPTION CAN BE USED AT ANY ONE TIME.
 - 3) REFER TO DISPLAY SCHEMATIC AND LAYOUT DRAWINGS FOR COMPLETE DISPLAY WIRING.
 - 4) THE LIGHT SENSOR IS LOCATED IN THE PRIMARY DISPLAY ONLY.
 - 5) FOR CONTROLLER PART NUMBER REFER TO DISPLAY FINAL ASSEMBLY BOM.
- (A) CAT 5 PATCH CABLE (RJ45 CABLE, 8 PIN 1 TO 1) 24 AWG.
 (B) 10 PIN 1 TO 1 RIBBON CABLE, (.05 CENTER TO CENTER) 28 AWG, (REFER TO CHART 1 FOR FUNCTIONS)
 (C) CABLE, FIBER OPTIC, LC-LC, 50/125, MM DUPLEX FIBER, MULTIMODE



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 BROOKINGS, SD 57006
 DO NOT SCALE DRAWING

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PROJ: M4 MATRIX CONTROLLER
 TITLE: SCHEM, M4, PRIMARY SIGNAL, INTERNAL, W/QC & MLC

DESIGN: _____ DRAWN: TANDERS DATE: 8 APR 08
 SCALE: NONE

REV	DATE	DESCRIPTION	BY
03	27SEP11	REPLACED MEDIA CONVERTER A-1778 WITH A-2826.	LLK
02	20MAY09	ADDED PORT 0 TO M4 CORRECTED BOTTOM JACK TO TOP JACK	ARH
01	14OCT08	ADDED OPTIONAL ENCLOSURE FAN. ADDED J10 AND J23 TO PROD BD. CORRECTED TB1 PIN OUT.	DJM

SHEET 1 OF 1 REV 03 JOB NO: P1415 FUNC-TYPE-SIZE R-03-B

380351

Appendix B: International Installation

The power source is the biggest difference between domestic and international applications. International displays run on 240 VAC.

Terminating single-phase power to the internal power termination panel:

Daktronics' displays used in international applications are equipped with different power termination panels than domestic displays. However, the termination method is similar to domestic termination discussed in **Section 3.5**.

1. Open the display as explained in **Section 6.2** and locate the power termination panel.
2. Route the cable through conduit to the back of the display. Remove the rubber plug from the $\frac{3}{4}$ " knockouts for access, being careful not to damage internal components.
3. Remove the cover of the power termination panel.
4. Connect the neutral wire to the neutral lug and the live wire to the Line 1 lug, as shown in **Figure 33**.
5. The ground wire connects to the grounding bus bar.

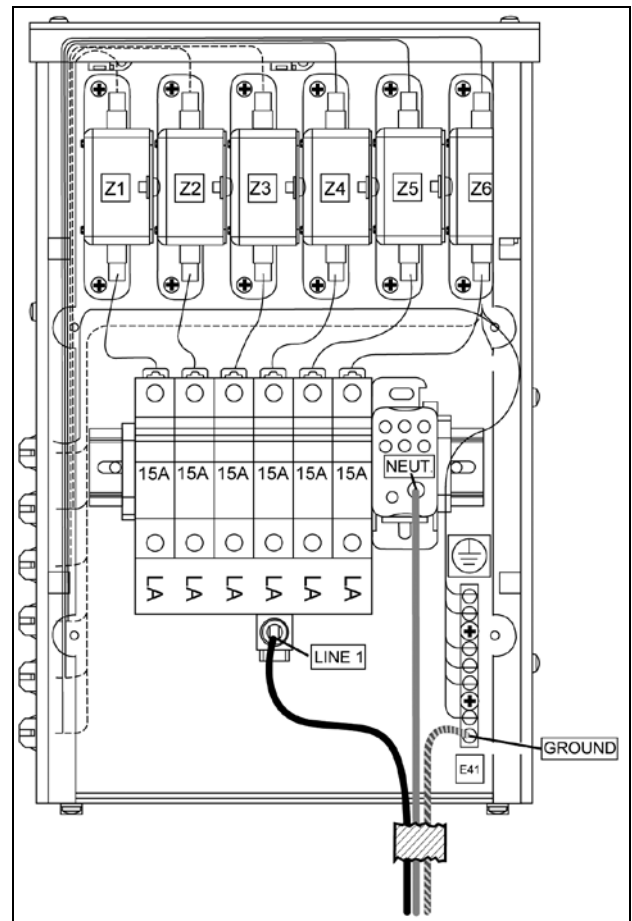


Figure 33: 240 V Single-Phase Power Termination

Terminating hot, neutral, and ground wires at the J box

1. Route the power cable through $\frac{3}{4}$ " conduit to the rear of the display and into the power termination J box.
2. The power termination enclosure contains two wires plus a ground wire coming from the interior of the display. These wires are pre-terminated to the power termination panel inside the display.
3. Inside the external power termination J box, connect the power wires to the wires coming from the display interior using wire nuts. Refer to **Figure 34** for a diagram.

Note the following colors are used for the pre-terminated wires:

240 VAC (two wires plus ground)	
Line 1	Brown
Neutral	Blue
Ground	Green-Yellow

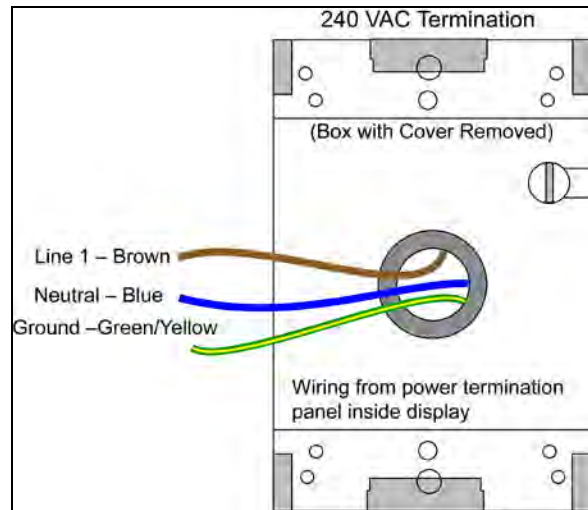


Figure 34: 240 VAC International Power Termination

Appendix C: Maintenance Log

Inspection Item:	Date performed:								
General: Exterior Visual Inspection									
General: Interior Visual Inspection									
Modules: Weather Stripping									
Modules: Electrical Connections									
Modules: Latch Operation									
Ventilation System: Fans									
Ventilation System: Filters									
Hardware/Fasteners: Loose bolts, nuts, screws, rivets, etc.									
Cabinet (Int. & Ext.): Paint cracking and peeling									
Cabinet (Int. & Ext.): Metal Corrosion									

Appendix D: Daktronics Warranty and Limitation of Liability

Reference Drawings:

- Temp Sensor Cable Routing Schematic Drawing A-197884
- Exploded Temp Housing Assembly Drawing A-198371

1.1 Temperature Sensor Overview

The temperature sensor enclosure, shown in **Figure 1**, is composed of eight plastic disks, a metal mounting bracket, and a 25-foot weather-resistant cable.

In most cases, the enclosure is mounted using two screws. The cable is plugged into the back of the display.

It may be necessary to disassemble the enclosure or rewire the temperature sensor board. Instructions are provided for those situations.

Refer to the following chart for part numbers if replacement or additional parts are needed.

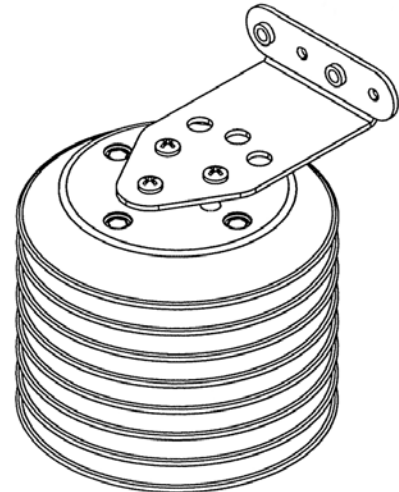


Figure 1: Temperature Sensor

Parts List	
Part Description	Daktronics Part Number
Temperature Sensor Housing Assembly	0A-1151-0005
4-pin Male Cable, 25 feet	W-1819
22 AWG 2-pair Shielded Cable	W-1234

1.2 Mounting Locations

For greater temperature accuracy, follow these mounting recommendations:

- **Mount sensor vertically.**
- An ideal location is under a north eave or on a northern exposure away from direct sunlight, as shown in **Figure 2**. In these cases, the quick-connect cable is not used. Four-conductor, 22-AWG, shielded cable must be pulled from the display to the temperature sensor location. Route the cable through conduit when exposed to outdoor conditions. The maximum length of the cable should be no more than 500 feet.
- Mount the sensor above grass or vegetation rather than concrete or other pavement.
- Mount at least 20 feet away from chimneys, vents, air conditioners, or other items that would influence correct temperature readings.
- Do not mount the sensor between displays or locations that restricts air movement.
- Mount the sensor so the cable is protected from weather and vandalism.

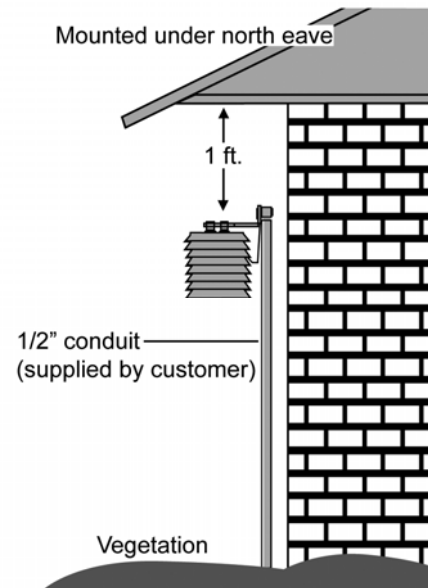


Figure 2: Located on the North Eave

The most common location for the temperature sensor is on the display structure, as shown in **Figure 3**. To keep the sensor shaded, locate it below or on a northern edge of the display.

Note: Always mount the sensor in a location so it can easily be connected to the primary display.

1.3 Using the provided 25-foot quick-connect cable (most common)

1. The temperature sensor is connected to the display through a quick-connect input plug on the back of the first face. The temperature sensor is provided with 25 feet of weather resistant cable. The cable does not need to be in conduit. The sensor connects to the display at J31. **Figure 4** shows the location of the quick-connect plug.
2. Coil any excess cable and secure it to discourage vandalism.

1.4 Using more than 25-feet of cable and no quick-connect plug (rare use)

1. Run 1/2" conduit from the temperature sensor location to a knockout on the back of the primary display. The cable must be routed through 1/2" metal conduit that is earth-grounded to protect the sensor and controller from lightning damage.
2. Use a 2-pair, 22 AWG, individually shielded cable to connect the sensor to the 4-position terminal block in the display labeled TB1. Connect to the controller as shown in **Figure 5**.
3. Open the temperature sensor housing by removing the four nuts from the bottom and removing the five bottom disks. Refer to **Drawing A-198371** for details on sensor housing disassembly.
4. Disconnect the quick-connect CAN temperature sensor cable from the temperature sensor terminal block in the CAN temperature sensor housing.

Temperature Sensor Attached to Display Structure

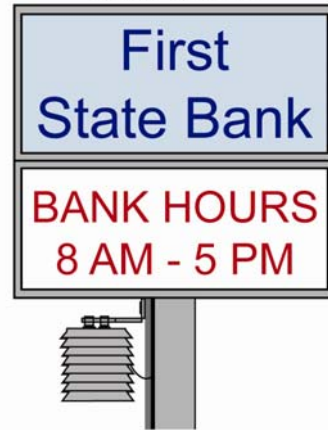


Figure 3: Located on Structure



Figure 4: GalaxyPro Revolution Quick-Connect Panel

5. Connect the cable coming from the controller's terminal block to the temperature sensor board in the temperature sensor housing. Refer to **Figure 5** and the following table for wiring locations and connections at the sensor and to the controller.
6. Route cable around the sensor board as shown in **Drawing A-197884**.
7. Connect the cable and reassemble the sensor.

Note: The cable length from the sensor to the last display should not exceed 500 feet.

Primary – Controller Board (A31-TB1)	Field Cabling	CAN Temp Sensor (TB1)
Pin 1 (+5V CAN)	Red	Pin 1 (+5V CAN)
Pin 2 (GND CAN)	Shield Black	Pin 4 (GND CAN)
Pin 3 (CAN H)	Green	Pin 2 (CAN H)
Pin 4 (CAN L)	White	Pin 3 (CAN L)

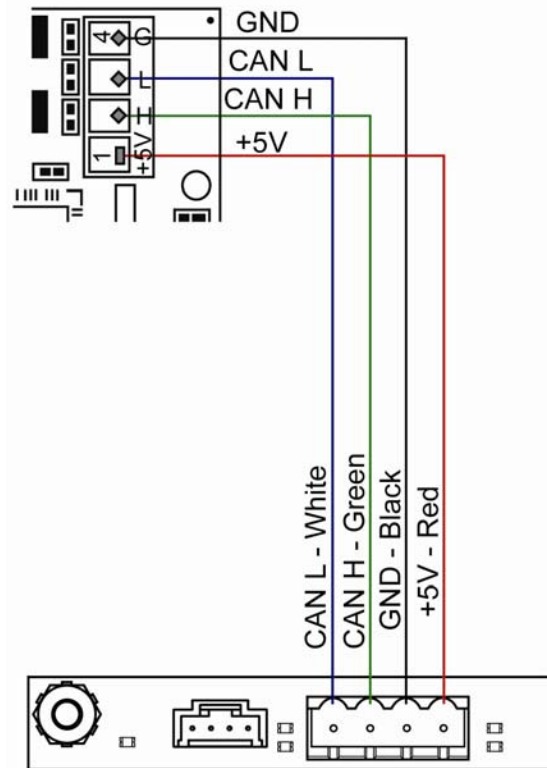


Figure 5: CAN Temperature Sensor Connection - M4 Controller

1.5 Temperature Interconnection (rare use)

In a primary to primary configuration, a 4-conductor shielded cable is needed to terminate the temperature sensor from one display to the other.

One end terminates at the 4-position terminal block (TB1) on the primary display. The other end terminates at the 4-position terminal block (TB1) in the second display. Refer to **Figure 6** and the following table for correct interconnect locations.

Note: Do not connect the wire to pin one on either display.

In a primary to primary configuration, a 4-conductor shielded cable is needed to

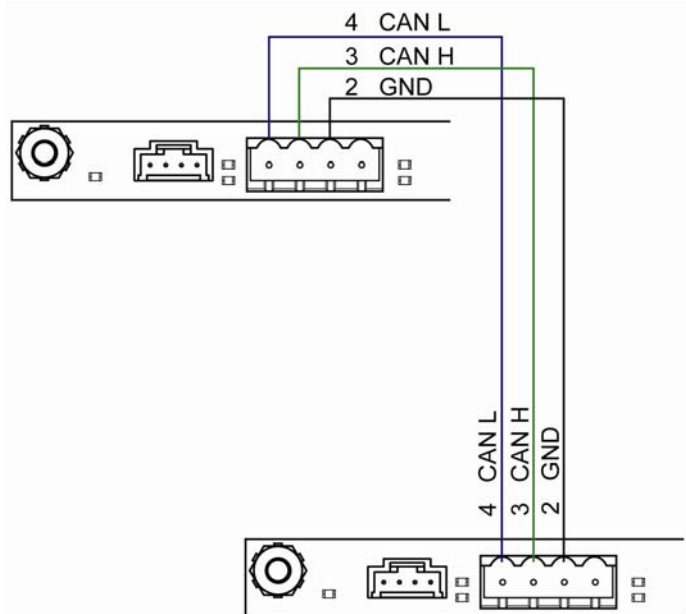


Figure 6: CAN Controller Interconnect – M4 Controller

terminate the temperature sensor from one display to the other.

One end terminates at the 4-position terminal block (TB1) on the primary display. The other end terminates at the 4-position terminal block (TB1) in the second display. Refer to **Figure 6** and the following table for correct interconnect locations.

Interconnect Locations – M4 Controller		
Primary (A31-TB1)	Field Cabling	Secondary (A31-TB1)
Pin 2 (GND CAN)	Black	Pin 2 (GND CAN)
Pin 3 (CAN H)	Green	Pin 3 (CAN H)
Pin 4 (CAN L)	White	Pin 4 (CAN L)

Note: Do not connect the wire to pin one on either display.

1.6 Sensor Replacement

If the temperature sensor board or wiring malfunctions, access it by:

1. Open the temperature sensor housing by removing the four nuts from the bottom and then removing the five bottom disks. Refer to **Figure 7** for details on sensor housing disassembly.
2. Label the wires connected to the temperature sensor board and then disconnect the cable from the sensor terminal block in the temperature sensor housing.
3. Remove the two screws holding the board to the plastic disk. Install the new board and replace the two screws.
4. Reconnect the cable to the temperature sensor board, making sure all the wires make a good electrical connection.
5. Route wires around the sensor board as shown in **Figure 8** and reassemble the sensor enclosure.

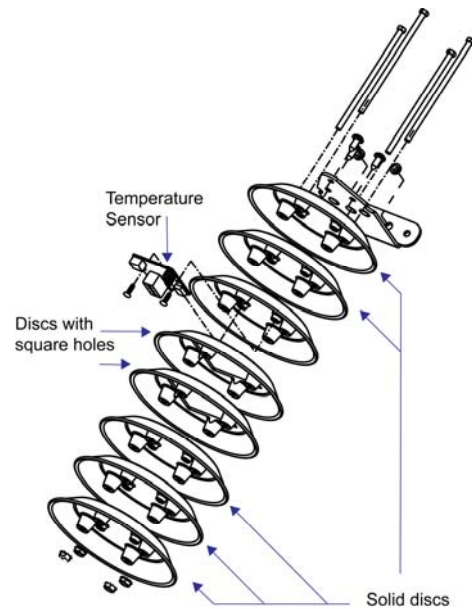


Figure 7: Temperature Sensor Diagram

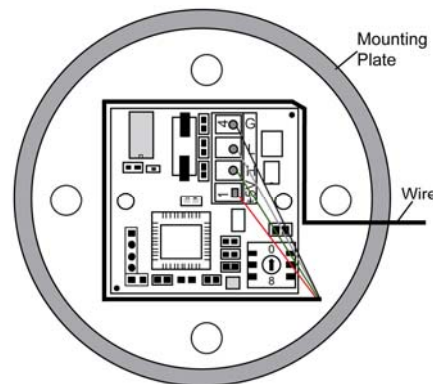
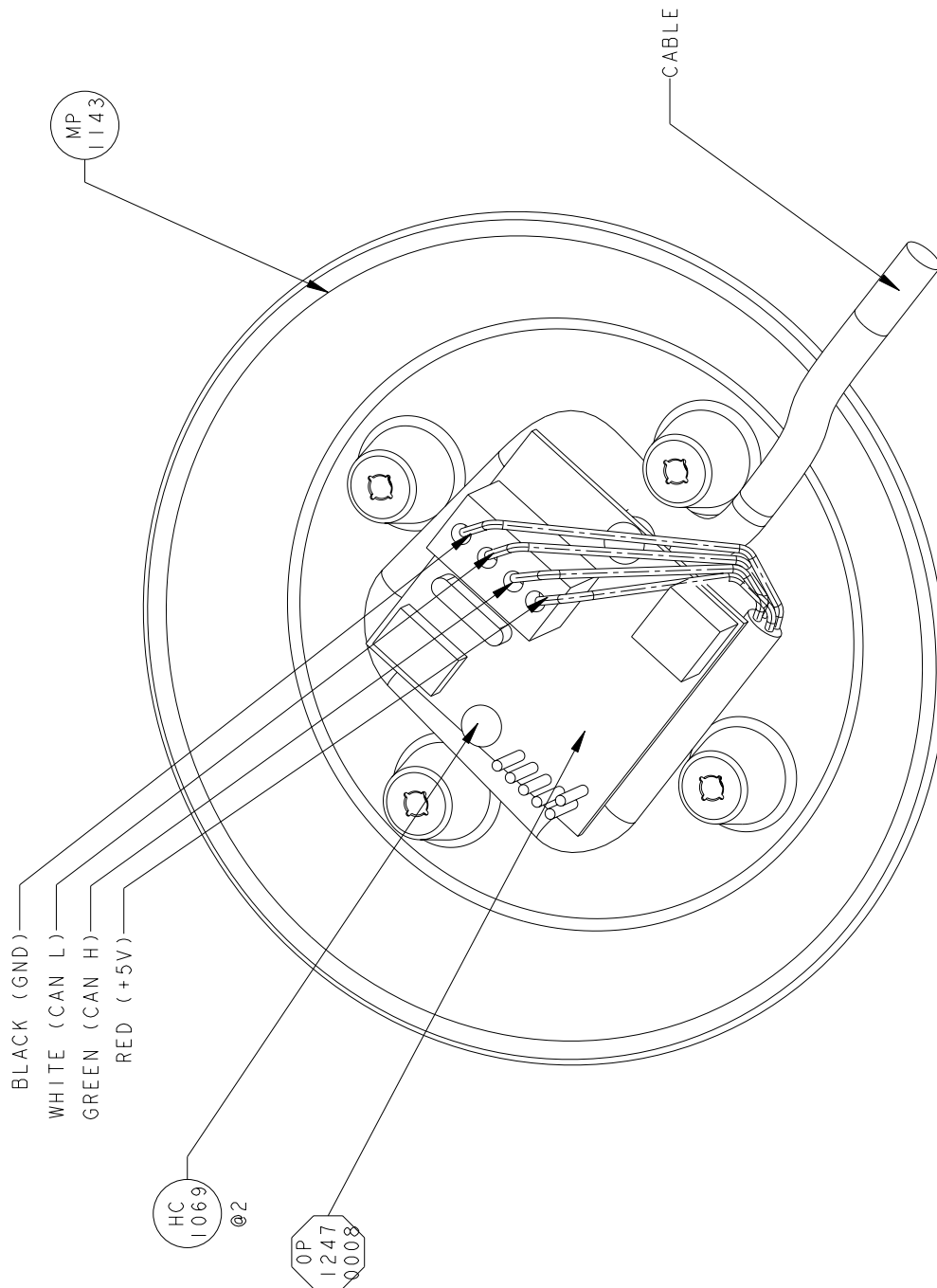


Figure 8: Temperature Sensor Wiring



ASSEMBLY INSTRUCTIONS:
 ATTACH PCB BOARD TO MP-1143 W/ HC-1069.
 STRIP JACKET OF W-1819 2". STRIP INSULATION
 OF INDIVIDUAL WIRES APPROXIMATELY 1/4".
 INSERT WIRES INTO TERMINALS AS SHOWN & TIGHTEN.
 ROUTE CABLE AS SHOWN.

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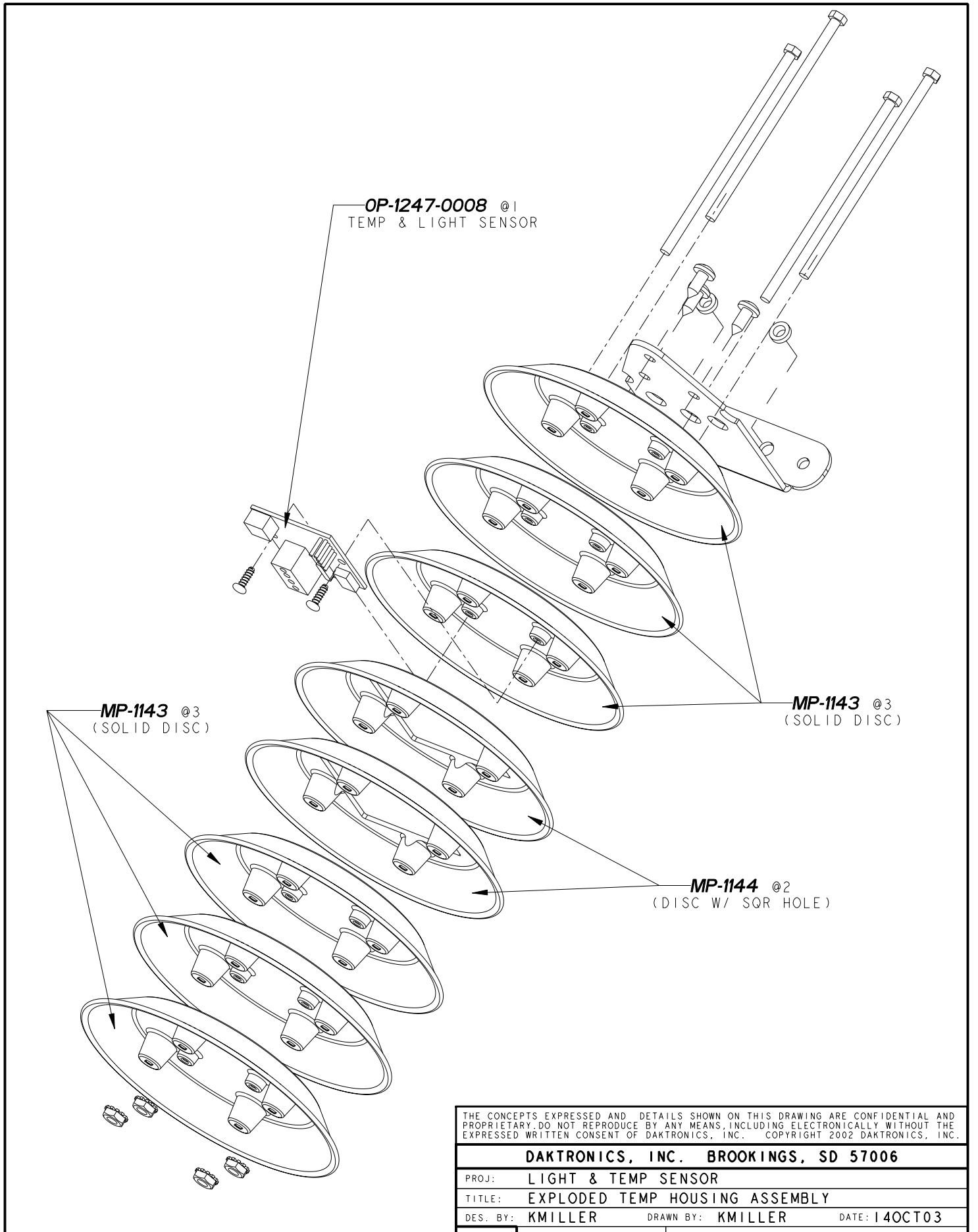
PROJ: LIGHT & TEMP SENSORS

TITLE: TEMP SENSOR CABLE ROUTING SCHEMATIC

DES. BY: K MILLER DRAWN BY: K MILLER DATE: 03OCT03

REVISION SHEET 1 OF DWG 197884 1151-E10A-197884
 SCALE: 1 = 1

REV.	DATE	DESCRIPTION	BY	APPR.



OP-1247-0008 @1
TEMP & LIGHT SENSOR

MP-1143 @3
(SOLID DISC)

MP-1143 @3
(SOLID DISC)

MP-1144 @2
(DISC W/ SQR HOLE)

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:	LIGHT & TEMP SENSOR		
TITLE:	EXPLODED TEMP HOUSING ASSEMBLY		
DES. BY:	KMILLER	DRAWN BY:	KMILLER
		DATE:	14OCT03

REVISION	SHEET 1 OF DWG 198371	1151-E10A-198371
	SCALE: 1=3	

REV.	DATE	DESCRIPTION	BY	APPR.