RTN-3000 SERIES

DAKT-0203-00

DISPLAY MANUAL

P2453

DD5210846
Rev 03
01 October 2024

201 Daktronics Drive
Brookings, SD 57006-5128
www.daktronics.com/support
800.325.8766

DAKTRONICS

FCC Statement

Supplier Declaration of Conformity (SDoC)

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Warning: The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Industry Canada Regulatory Information

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Inquiries

Contact Daktronics with any questions regarding our product compliance.

Mail:

Daktronics
201 Daktronics Dr.
Brookings, SD 57006 USA

Phone:

800-325-8766

Website:

www.daktronics.com

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1 Introduction

How to Use This Manual

This manual explains the installation, maintenance, and troubleshooting of this ribbon display system. For additional information regarding the safety, installation, operation, and service of this system, refer to the telephone numbers listed in **Daktronics Exchange and Repair & Return Programs (p.7)**. This manual contains only generic installation topics and is not specific to a particular installation. Contract-specific information takes precedence over any general information found in this manual.

Daktronics identifies manuals by the DD number located on the cover page of each manual. For example, this manual would be referred to as **DD5210846**.

Numbering Conventions

Drawing Number

Figure 1 illustrates a Daktronics drawing label. This manual refers to drawings by listing the last set of digits. In the example, the drawing would be referred to as **DWG-3929851**.

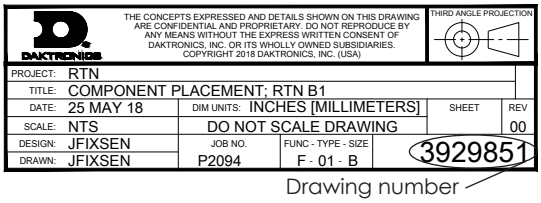

Figure 1: *Drawing Label*

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

> Refer to **DWG-3929851** in **Appendix B: Reference Drawings (p.13)** for the locations of internal display components.

Part Number

Most display components within a display carry a white label that lists the part number. The component part number uses the following format: 0A-XXXX-XXXX (multi-component assembly) or 0P-XXXX-XXXX (display interface board). **Daktronics Exchange and Repair & Return Programs (p.7)** contains the Daktronics Exchange Policy as well as the Repair & Return Program.

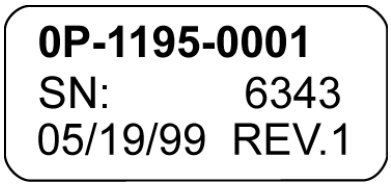

Figure 2: *Typical Label*

Refer to these instructions if any display components need replacing or repairing. **Figure 2** illustrates a typical label. The part number is in bold.

Part Type	Part Example	Part Number
Assembly	Display interface board and its mounting plate or bracket	0A-XXXX-XXXX
Individual display interface board	ProLink Router (PLR)	0P-XXXX-XXXX
Wire or cable	SATA cable	W-XXXX

Module Number

Figure 3 explains the module labeling method in more detail, and **Figure 4** illustrates how Daktronics numbers modules on a ribbon display.

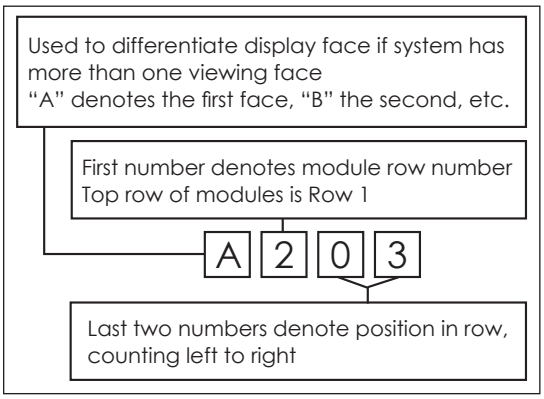

Figure 3: *Module Number Breakdown*

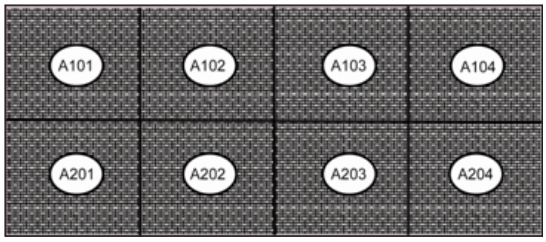

Figure 4: *Module Number*

Model Number

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

RTN-301-10/15MN-HHHxWWW		
RTN-301	=	Product series
10/15MN	=	Pixel pitch/layout
HHH	=	Matrix height
WWW	=	Matrix width

Important Safeguards

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

2 Warnings/Disclaimers

Review the reference documents and drawings in **Appendix A: Reference Documents (p.11)** and **Appendix B: Reference Drawings (p.13)** prior to installation as well as during the installation process.

Display

Daktronics engineering staff must approve any changes that may affect the strength or protective integrity of the display frame or enclosures. If any modifications of this nature are made, detailed drawings of the change(s) must be submitted to Daktronics engineering staff for evaluation and approval, or the warranty will be null and void.

Displays must be lifted appropriately to ensure the display sections will not be damaged.

It is the installer's responsibility to ensure the installation meets all local codes and standards. All hardware processes used during display installation must meet the approved, stamped drawings from a professional engineer.

This display is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign. A disconnect device shall be provided by the contractually obligated party for installation of the equipment.

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

- Ensure that all electrical work meets or exceeds all local or national electrical codes.
- Provide the required power to the display as listed on the product labels, specifications, or site-specific riser drawings. The conductor size may vary based on the length of the power run.
- Consider implementing a separate circuit for the display using an isolation transformer or dedicated transformer.
- Daktronics assumes no liability for any issues caused by line voltage fluctuations or other improper power conditions.

Structure

It is the installer's responsibility to ensure the mounting structure and hardware are built per the stamped engineering drawings and are capable of supporting the display prior to beginning the installation.

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3 Glossary

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

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

Light emitting diode (LED): a low energy, high intensity lighting unit.

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

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

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

Module latch: a latch that stretches across the top of the module and is accessible from either the front or the rear.

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

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

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

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

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

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4 Replacement Parts

Replacement Parts List

Most display components have a white label that lists the part number in bold. Refer to **Part Numbers (p.1)** for information on how to read the part number. Part numbers may also appear on illustrations and reference drawings as well as in the Bill of Materials (BOM) for the project. If a replacement part cannot be identified, contact Daktronics Customer Service. The following is a list of components that are commonly replaced: PLR (ProLink Router) and power supply.

Daktronics Exchange and Repair & Return Programs

To serve customers' repair and maintenance needs, Daktronics offers both an Exchange Program and a Repair & Return Program.

Exchange Program

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

Before contacting Daktronics, identify these important part numbers:

Display Serial Number: _____

Display Model Number: _____

Contract Number: _____

Installation Date: _____

Sign Location: _____

Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps:

1. **Call Daktronics Customer Service.**

Market Description	Customer Service Number
Schools (primary through community/junior colleges), religious organizations, municipal clubs, and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums, and arenas	866-343-6018
Financial institutions, petroleum, sign companies, gaming, and wholesale/retails establishments	866-343-3122
Department of Transportation, mass transits, airports, and parking facilities	800-833-3157

2. **Mail the old part to Daktronics when the new exchange part is received.**

   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.

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

3. **Return the part within 30 working days if the replacement part does not solve the problem, or Daktronics will charge the full purchase price.**

   If the part is still defective after the exchange is made, please contact Daktronics Customer Service immediately. Daktronics expects immediate return of an exchange part if it does not solve the problem. Daktronics also reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

Repair & Return Program

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

1. **Call Daktronics Customer Service.**

   Refer to the telephone number listed on the previous page.

2. **Receive a Return Materials Authorization (RMA) number before shipping.**

   Refer to the telephone number listed on the previous page.

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

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

4. **Enclose the following information:**

   - Name
   - Address
   - Phone number
   - RMA number
   - Clear description of symptoms

Shipping Address

Daktronics Customer Service
600 E 54th St N
Sioux Falls, SD 57104
Case #

Warranty & Limitation of Liability

The Daktronics Warranty & Limitation of Liability statement is located in **Appendix C: Daktronics Warranty & Limitation of Liability (p.15)**. The warranty is independent of extended service agreements and is the authority in matters of service, repair, and display operation.

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A Reference Documents

Use the following documents in the order listed:

- **RTN-3000 Series Mounting Structure Quick Guide (DD5210840)**
- **RTN-3000 Series Section Crating Quick Guide (DD5210836)**
- **RTN-3000 Series Section Weights & Lifting Quick Guide (DD5210838)**
- **RTN-3000 Series Section Basics Quick Guide (DD5210841)**
- **RTN-3000 Series Panel Installation Quick Guide (DD5210842)**
- **RTN-3000 Series Electrical and Service Quick Guide (DD5210843)**
- **RTN-3000 Series Border Installation Quick Guide (DD5210845)**

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The images in this document may reflect exaggerated sizes for better comprehension.

It is the installer's responsibility to ensure the installation meets all local codes and standards. All hardware processes used during display installation must meet the approved, stamped drawings from a professional engineer.

Site Overview

During the site overview, a contractor surveys for as-built conditions of the structure or mounting location through the following procedures:

- Measuring for elevation differences
- Measuring for structural dimensions
- Checking for variation in the face location
- Scanning the concrete fascia for rebar locations (recommended)

After completing the initial site survey, the installer compares the results to the contract-specific Shop Drawing. If any variations or discrepancies exist between the plan dimensions and the site survey, contact the project manager and the general contractor for the best course of action.

It is the installer's responsibility to ensure the mounting structure and hardware are built per the stamped engineering drawings and are capable of supporting the display. Daktronics is not responsible for mounting decisions made by others.

Figure 1 illustrates a front view of a typical display layout that is linearly scalable with all available section sizes, and **Figure 2** illustrates a front view of a typical wall support structure. Refer to the supplied display section layout documentation for dimensions (X_{ix}) and (Y_{ix}), to the **RTN-3000 Series Section Weights and Lifting Quick Guide (DD5210838)** for available section sizes, and to the contract-specific Shop Drawing for horizontal wall clip locations.

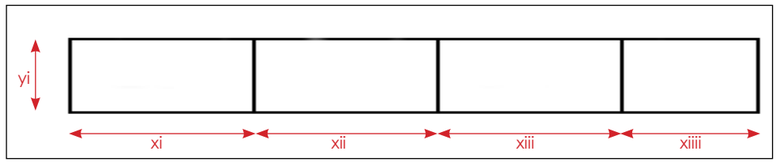

Figure 1: *Typical Display Layout (Front View)*

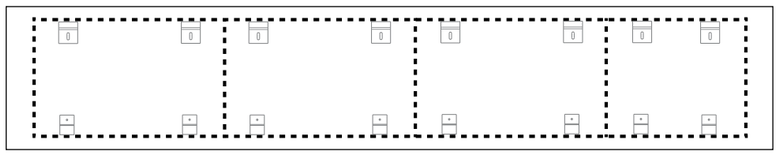

Figure 2: *Typical Wall Support Structure with Display Overlay*

C-Clip Mounting Style

C-Clips attach directly to the fascia with a seismic screw. Refer to the contract-specific Shop Drawing for details on clip placement. Ensure the clips are level across the entire fascia as shown in **Figure 3**.

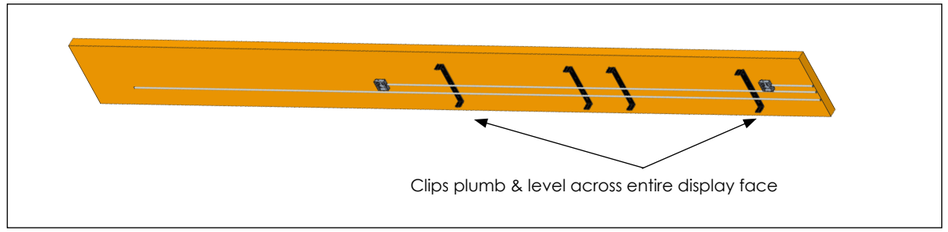

Figure 3: *Level Upper Wall Clips*

Z-Clip Mounting Style

Ensure the upper wall clips are level across the entire fascia as shown in **Figure 4**. To ensure proper anchor embedment, upper wall clips *cannot* be shimmed on the fascia face. Lower Z-clips can be shimmed on the fascia face, but shimming must be approved by the project team prior to installation. Any shimming must be done on the cabinet clips.

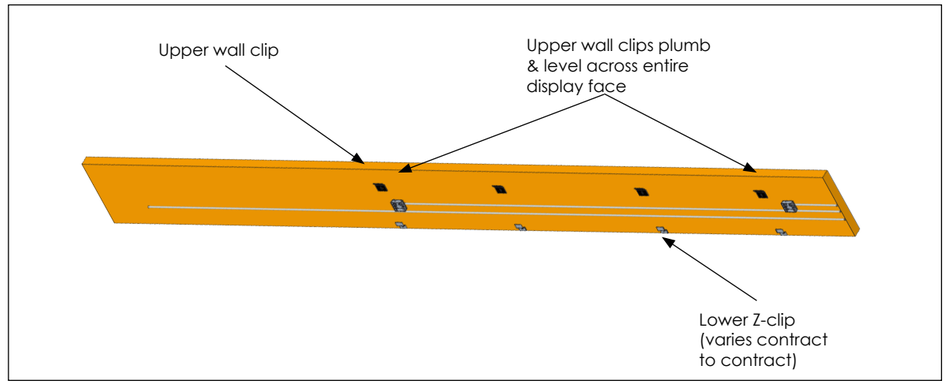

Figure 4: *Level Upper Wall Clips*

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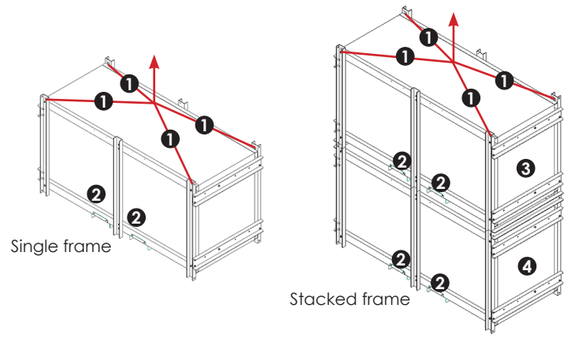
Lift

1. Use either a forklift or a crane to lift the shipping frames. For single frames, lift from either the forklift pockets with a forklift or from the supplied lift points on the end of the frame with a crane/straps or a spreader beam.

   For stacked frames, lift from either the forklift pockets on the top frame with a forklift or from the supplied lift points on the end of the frame with a crane/straps or a spreader beam.

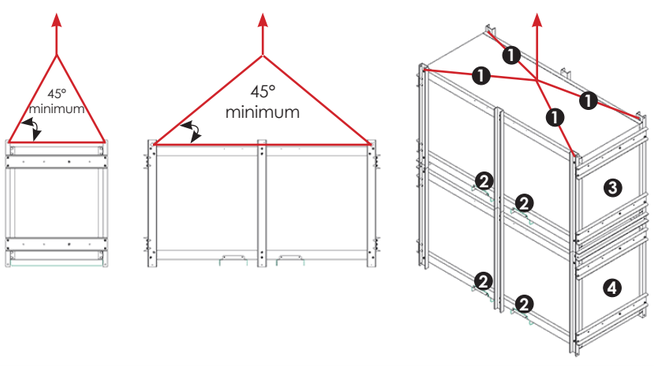
   Do not forklift stacked frames from the bottom frame, as this is unstable and could result in serious injury to the operator and/or damage to the product. Refer to **Figure 1**.



1: Strap
2: Forklift pocket
3: Top frame
4: Bottom frame

Figure 1: *Lift Methods*

2. Ensure the straps are at a minimum 45° angle or greater if using a crane/straps to lift the frames. Refer to **Figure 2**.



1: Strap
2: Forklift pocket
3: Top frame
4: Bottom frame

Figure 2: *Strap Angle (Front & Side View)*

Disassemble

1. Remove the M12 hardware from the stacked frame support brackets on the frames to separate the top and bottom frames (if applicable). Unstack the frames and remove the stretch wrap and the top horizontal runners from the frames. Refer to **Figure 3**.

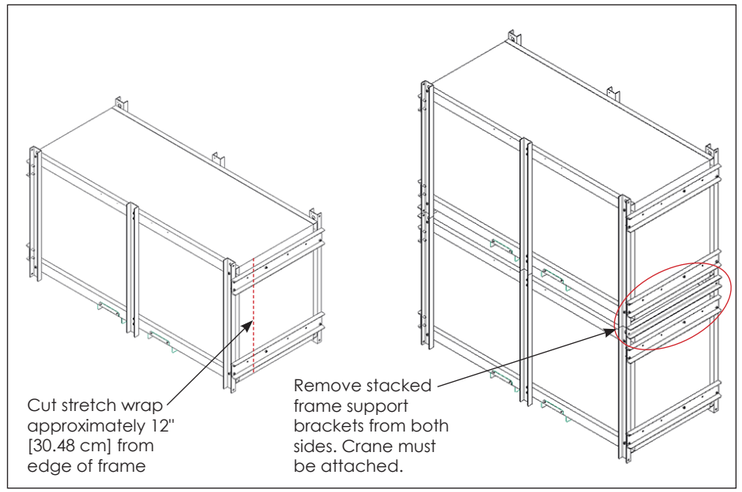


Figure 3: *Separate and Unstack Frames*

2. Use the hex security bit (Daktronics part number TH-1170) supplied in the toolkit to unlatch the beverage shroud. Flip the beverage shroud open and insert lift eyes in the top of the first display section. Refer to the **RTN-3000 Series Section Basics Quick Guide (DD5210841)**. Attach the crane to the lift points. Refer to **Figure 4** for the section lift order and to **Figure 5** for proper configurations.

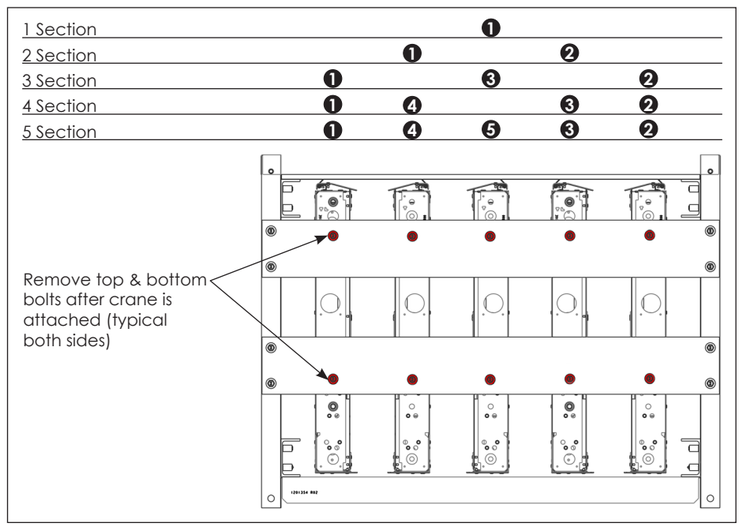


Figure 4: *Section Lift Order (Front View)*

Stabilize

Figure 5 shows stable and unstable configurations.

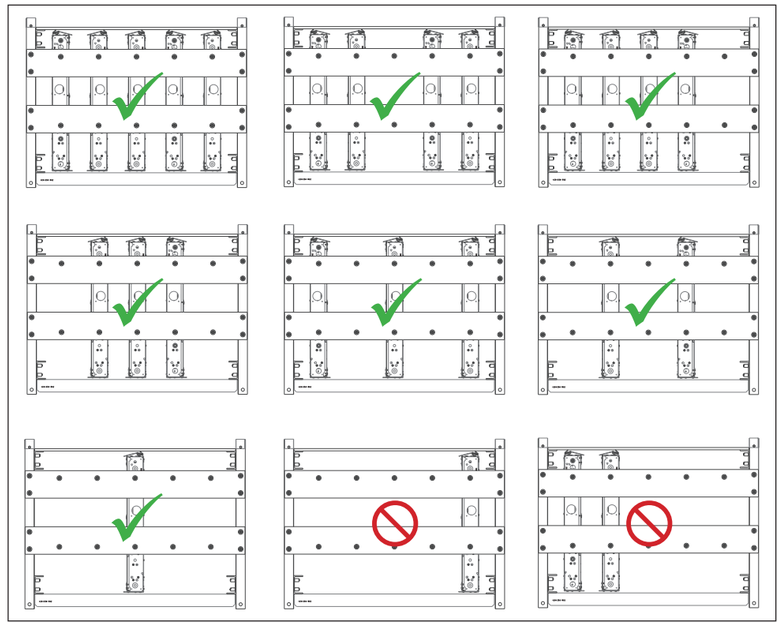


Figure 5: *Stable vs. Unstable Crate Configurations (Side View)*

Stable Configurations

- Any four or five sections
- Three middle sections
- One outside section on each side and one center section
- Two outside sections
- One center section

Unstable Configurations

- Two sections on one side
- Any single section in the outer locations

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Primary Lifting Connection

Display Width	Lift Eye Location X	Lift Eye Spacing Y	Minimum Cable Length L
1-Module Wide	N/A	N/A	N/A
2-Modules Wide	9.85" [250 mm]	N/A	N/A
4-Modules Wide	20.38" [517 mm]	N/A	N/A
6-Modules Wide	20.41" [518 mm]	18.97" [482 mm]	14" [356 mm]
8-Modules Wide	20.41" [518 mm]	18.97" [482 mm]	28" [711 mm]
10-Modules Wide	20.41" [518 mm]	18.97" [482 mm]	42" [1067 mm]
12-Modules Wide	40.1" [1018 mm]	38.71" [983 mm]	28" [711 mm]

Lift Eyes

M12 lift eyes are supplied with the installation hardware. Lift eyes should be installed with the hole parallel to the display face as shown in **Figure 1**. The beverage shroud must be opened or removed to access the lift eye locations.

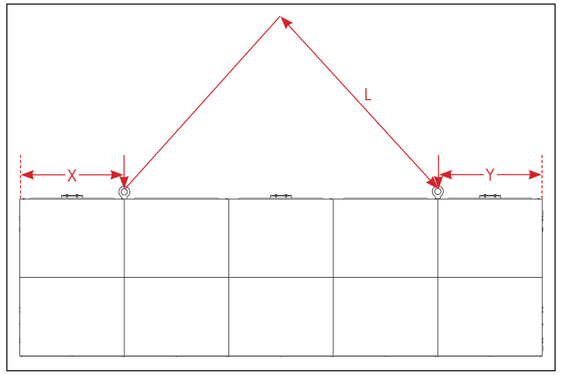

Figure 1: *Lift Eye Locations (Beverage Shroud Removed)*

Acceptable Lifting Methods

Recommended Method

- Use a spreader beam with sufficient weight capacity. Refer to **Figure 2** and **Section Sizes & Weight Estimates (p.1)**.
- Connect to both lift eye locations.
- Lift displays one section at a time.

Alternate Method

This method is not approved for ProRail® applications.

- Use chains, cables, or straps with sufficient weight capacity, accounting for increased loads from the rigging angle. Refer to **Figure 3** and **Section Sizes & Weight Estimates (p.1)**.
- Lift at a maximum angle of 45° from vertical. Refer to **Figure 3**.

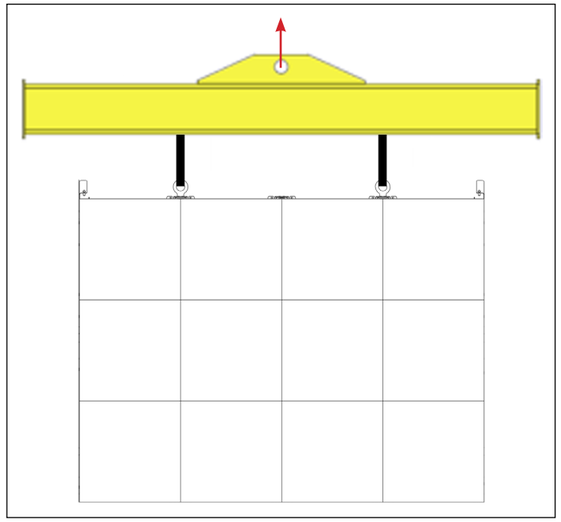

Figure 2: *Lift with Spreader Beam*

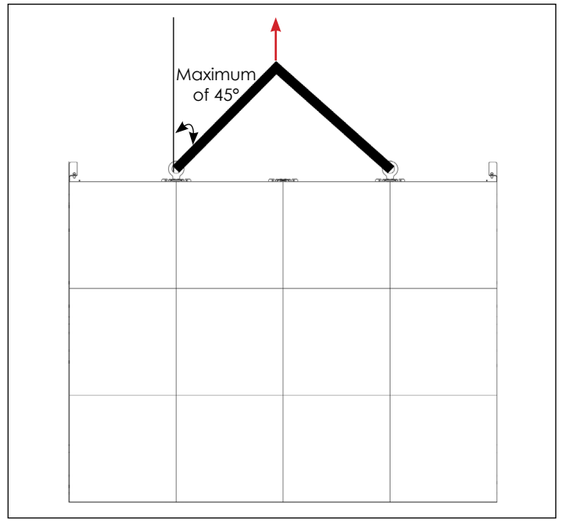

Figure 3: *Lift with Chains*

Section Sizes & Weight Estimates

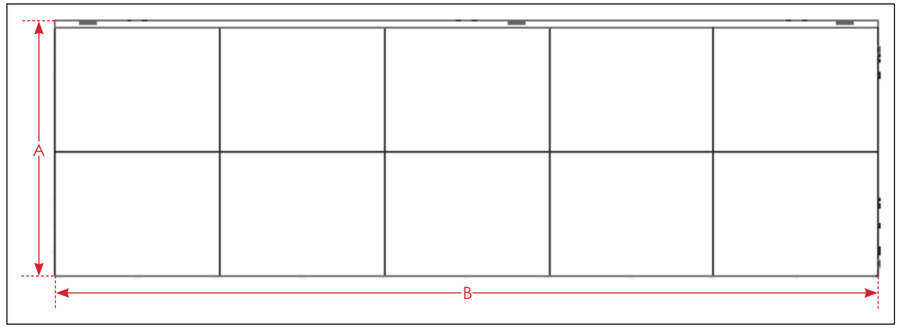

Figure 4: *Front View*

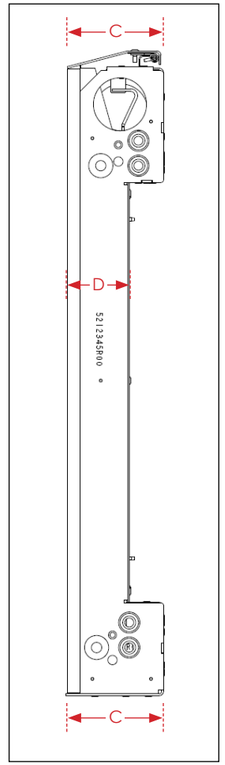

Figure 5: *Side View*

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Modules High x Modules Wide	Estimated Weight	Active Area	Overall Height A	Overall Width B	Overall Depth C	Overall Depth D
2 x 1	12 lbs [5 kg]	19.69" [500 mm] x 9.83" [250 mm]	20.63" [524 mm]	9.83" [250 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 2	21 lbs [10 kg]	19.69" [500 mm] x 19.69" [500 mm]	20.63" [524 mm]	19.69" [500 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 4	40 lbs [18 kg]	19.69" [500 mm] x 39.39" [1000 mm]	20.63" [524 mm]	39.39" [1000 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 6	60 lbs [27 kg]	19.69" [500 mm] x 59.06" [1500 mm]	20.63" [524 mm]	59.08" [1501 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 8	79 lbs [36 kg]	19.69" [500 mm] x 78.75" [2000 mm]	20.63" [524 mm]	78.77" [2001 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 10	98 lbs [44 kg]	19.69" [500 mm] x 98.44" [2500 mm]	20.63" [524 mm]	98.46" [2501 mm]	4.50" [114 mm]	2.88" [74 mm]
2 x 12	117 lbs [53 kg]	19.69" [500 mm] x 118.125" [3000 mm]	20.63" [524 mm]	118.16" [3001 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 1	16 lbs [7 kg]	29.53" [750 mm] x 9.83" [250 mm]	30.47" [774 mm]	9.83" [250 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 2	29 lbs [13 kg]	29.53" [750 mm] x 19.69" [500 mm]	30.47" [774 mm]	19.69" [500 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 4	56 lbs [25 kg]	29.53" [750 mm] x 39.39" [1000 mm]	30.47" [774 mm]	39.39" [1000 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 6	82 lbs [37 kg]	29.53" [750 mm] x 59.06" [1500 mm]	30.47" [774 mm]	59.08" [1501 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 8	109 lbs [49 kg]	29.53" [750 mm] x 78.75" [2000 mm]	30.47" [774 mm]	78.77" [2001 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 10	135 lbs [61 kg]	29.53" [750 mm] x 98.44" [2500 mm]	30.47" [774 mm]	98.46" [2501 mm]	4.50" [114 mm]	2.88" [74 mm]
3 x 12	162 lbs [73 kg]	29.53" [750 mm] x 118.125" [3000 mm]	30.47" [774 mm]	118.16" [3001 mm]	4.50" [114 mm]	2.88" [74 mm]

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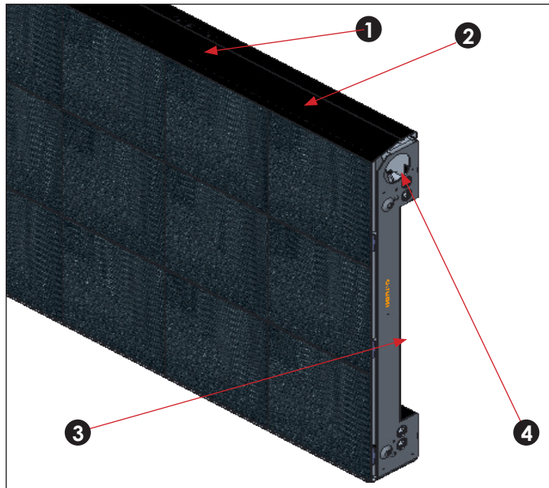
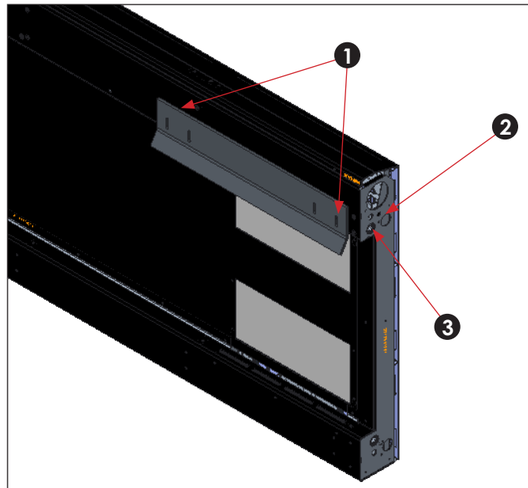


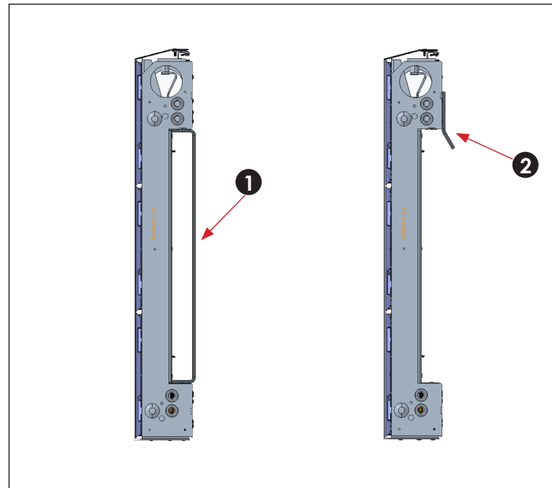
1: Beverage shroud
2: Security screw
3: C channel for cable routing
4: Power/Signal cable pass-through cutouts

Figure 1: *Display Front View*



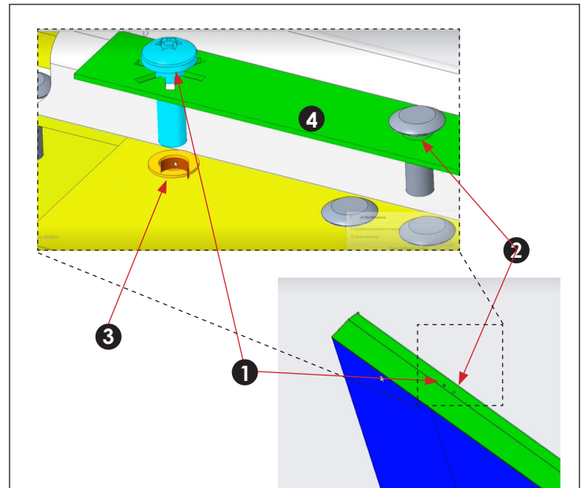
1: Z-clip bracket attached to M6 nutserts
2: Nutserts for horizontal interconnect
3: Dimple for rough alignment

Figure 2: *Display Rear View*



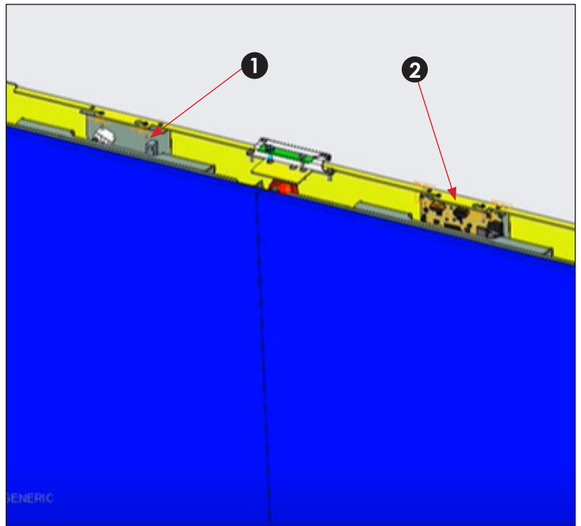
1: Panel prepared for C-channel
2: Panel prepared for Z-clip

Figure 3: *Beverage Shroud*



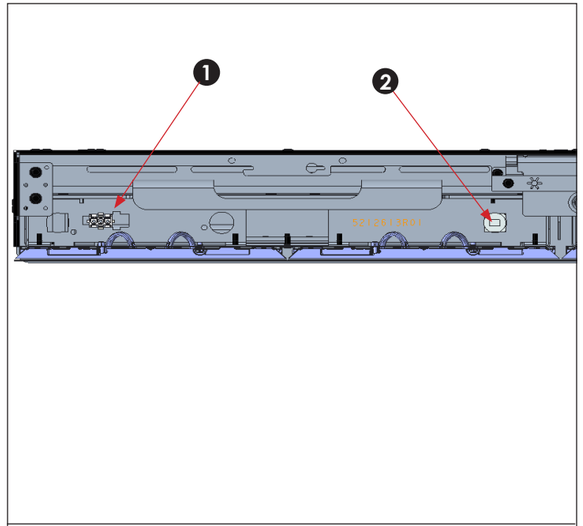
1: #6 Phillips security screw @ 2 per section
2: Rivet @ 2 per section
3: Border mounting through-hole
4: Screw retainer

Figure 4: *Display Top View*



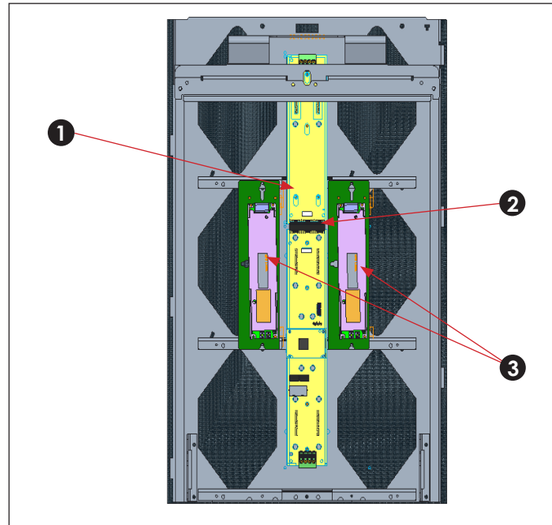
1: Power entrance @ 2 per panel (panels over 4 wide, no wing sections)
2: PLR mounting location @ 1 per panel (panels over 4 wide, no wing sections)

Figure 5: *Module Column Hardware*



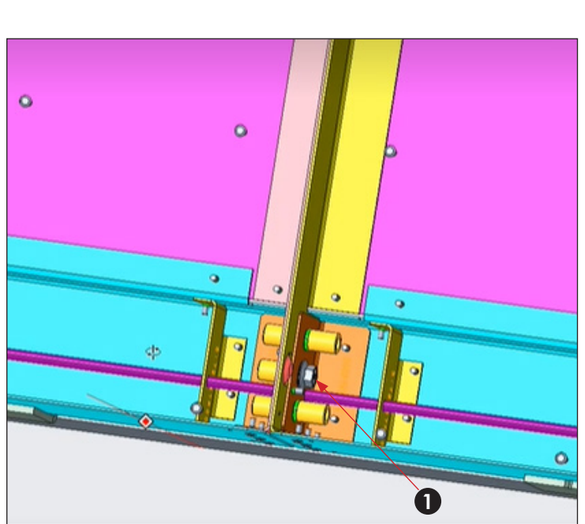
1: Panel-mount AC power harness
2: Panel-mount RJ45

Figure 6: *Display Top View*



1: Hub board
2: Receiver card
3: Power supplies

Figure 7: *Module Column Components*



1: M12 bolt

Figure 8: *Horizontal Interconnect*

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Attachment Methods

There are two acceptable methods for attachment to the structure: C-clip attachment and Z-clip attachment. Refer to the contract-specific Shop Drawing and the **RTN-3000 Series Mounting Structure Placement and Verification Quick Guide (DD5210840)**.

C-Clip Mounting Style

Clip Attachment

1. Level the C-clips according to the contract-specific Shop Drawing and their relation to the other clips. Refer to **Figure 1**.
2. Place a seismic screw in one of the bottom two holes. The upper hole provides the clip with symmetry but is not used for attachment. Tighten the screw through the C-clip. Refer to **Figure 2**.

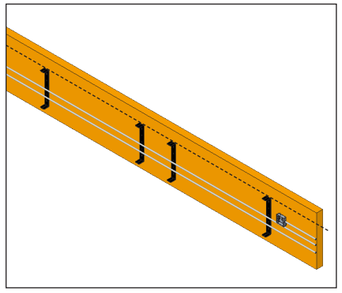


Figure 1: *C-Clip Alignment*

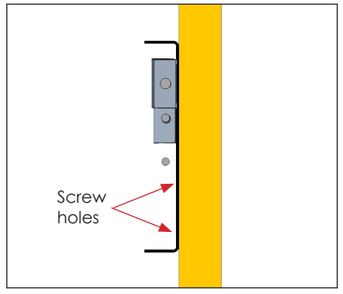


Figure 2: *C-Clip Detail*

Standard Section Attachment

1. Lift the display sections from the shipping crate using only the supplied lift eyes. A spreader beam is recommended when lifting but is required when ProRail® steel is attached. Refer to **Figure 3**, **Figure 4** and the **RTN-3000 Series Section Crating Quick Guide (DD5210836)** for details.

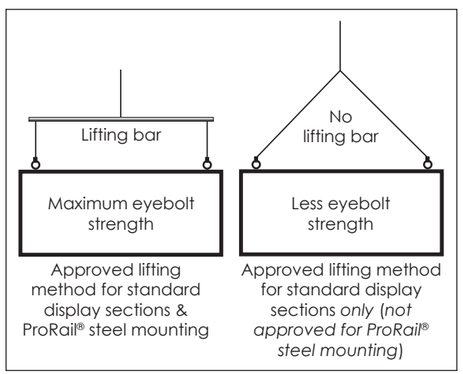


Figure 3: *Lift Display*

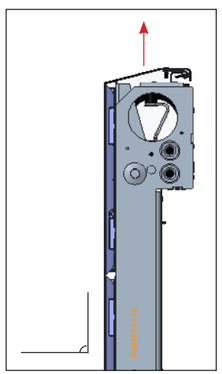


Figure 4: *Lift Angle*

Note: Do not set sections on the ground.

2. Once the clips are level and secure, slide the display onto the clips through the gap in the chassis. Refer to **Figure 5**.
3. Refer to the contract-specific Shop Drawing to determine the Z-axis depth. Measure from the front flange of the chassis to the front flange of each C-clip. Refer to **Figure 6**.

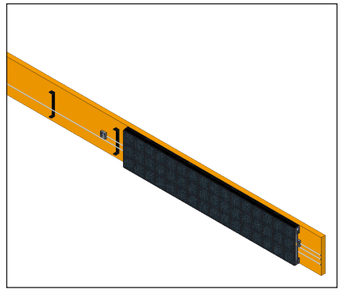


Figure 5: *Slide Display Section onto C-Clips*

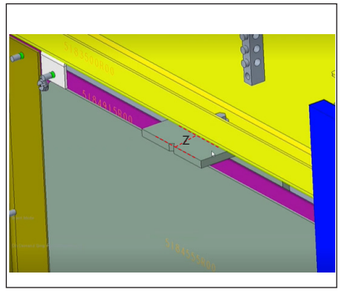


Figure 6: *Z-Axis Depth*

4. Examine the lower end of the C-clip that is cradling the bottom of the panel. If necessary, place shim tape in the gap between the C-clip and the display. Refer to **Figure 7**.
5. Screw through the bottom of the C-clip into the display for attachment.
6. Repeat **Steps 2-5** for each display section.
7. Remove the display modules from the end sections to access the interconnect location.
8. Once the cabinets have been placed, secure the horizontal interconnect points by inserting one M12 bolt from the right side of the cabinet to the left side of the cabinet. Refer to **Figure 8**.

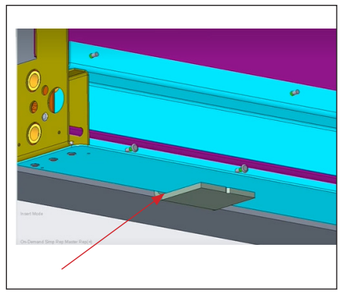


Figure 7: *Shim Gap Between C-Clip and Display*

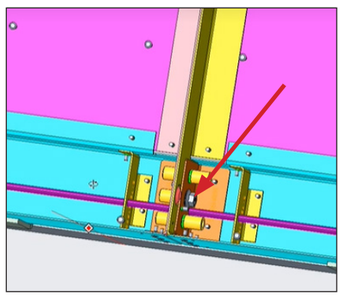
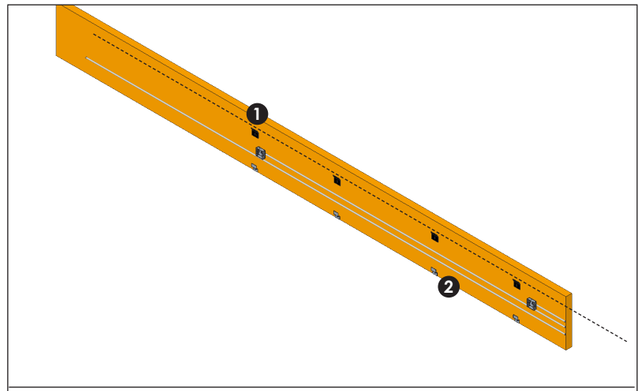


Figure 8: *Interconnect Bolt*

Z-Clip Mounting Style

Clip Attachment

1. Ensure the upper wall clips are plumb and level according to the contract-specific Shop Drawing. Refer to **Figure 9**.



1: Upper wall clip
2: Lower Z-clip (varies contract to contract)

Figure 9: *Plumb & Level Upper Wall Clips*

2. Verify the lower Z-clips are installed per the contract-specific Shop Drawing. Refer to **Figure 9**.

Standard Section Installation

1. Release the beverage shroud latches by rotating them counterclockwise with the $^{5}/_{16}$" hex security bit (Daktronics part number TH-1170) supplied in the toolkit to release the latches. Refer to **Figure 10**.
2. Rotate the beverage shroud upward to open the shroud. Refer to **Figure 11**.

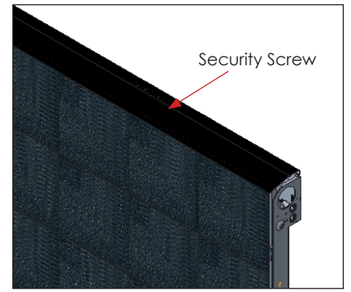


Figure 10: *Closed Beverage Shroud*

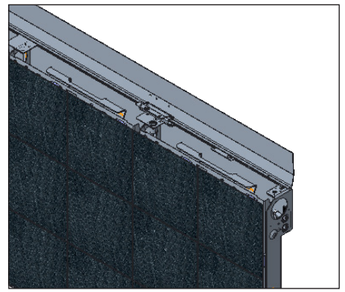


Figure 11: *Open Beverage Shroud*

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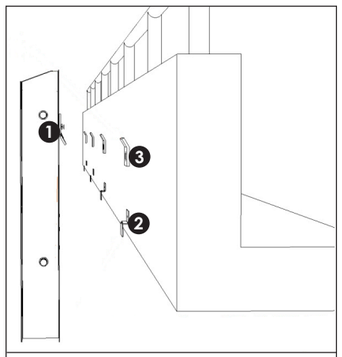
3. Lift the display sections from the shipping crate using only the supplied lift eyes. A spreader beam is recommended when lifting but is required when ProRail® steel is attached. Refer to **Figure 3**, **Figure 4**, and the **RTN-3000 Series Section Crating Quick Guide (DD5210836)** for details. Refer to **Figure 4**.

   Note: Do not set sections on the ground.

4. Use the rear section clips to mount the display section directly to a non-combustible wall surface. Refer to **Figure 12** and **Figure 13**. Ensure the section sits completely in the upper wall clips.

   Note: Clip placement varies by contract and may differ from what is shown in **Figure 12**.

Figure 12: *Rear Section Clips*



1: Rear section clip
2: Lower Z-clip
3: Upper wall clip

Figure 13: *Mount Display to Wall*

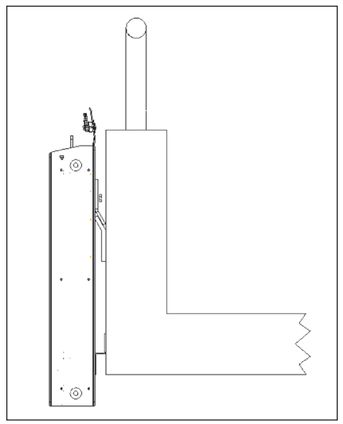


Figure 14: *Display Attached to Wall*

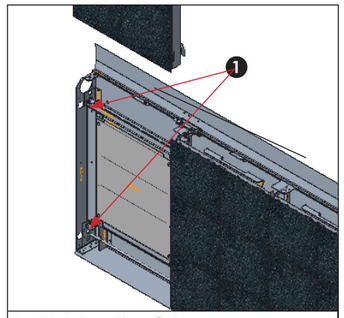
5. Ensure the section is plumb, level, and parallel to the wall. The alignment of the first section determines the alignment of the entire display. Refer to **Figure 14**.

   Note: Remove the lift eyes from the top perimeter before closing the beverage shroud.

6. Repeat **Steps 1-5** to hang the next section. Ensure the sections are flush to the adjoining section in all planes. Follow the steps in **Wing Section Installation (p.2)** to install a wing section.

7. Install two stitch bolts (#HC-3829060) through the right perimeter into the adjacent cabinet. Remove the modules or the module pan entirely to access the stitch locations. Refer to **Figure 15**.

   Note: Section-to-section seam tolerance should be ±5% of the pixel pitch. Pixel pitch = 15 mm, Seam tolerance = ±.75 mm (.030")



1: Stitch location @ 2

Figure 15: *Interconnect Sections*

8. Attach the display to the lower Z-clips for uplift protection. The modules may need to be removed from the front to attach the display.

   Note: This varies from contract to contract. Refer to the contract-specific Shop Drawing for further instructions.

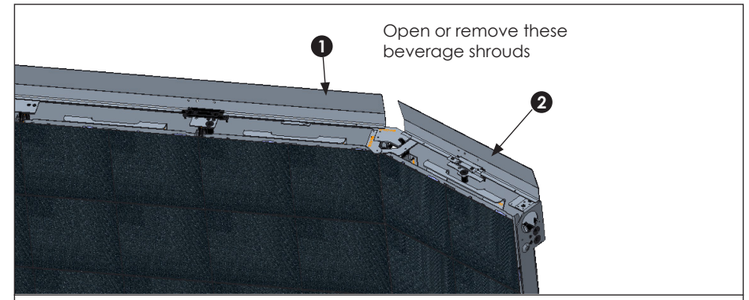
9. Close the beverage shroud and use the beverage shroud latches to secure the shroud.

Border Installation

Attach the borders with the supplied self-tapping screws (#HC-1778) if necessary. Refer to the contract-specific Shop Drawing for proper placement and to the **RTN-3000 Series Border Installation Quick Guide (DD5210845)** for installation instructions.

Wing Section Installation

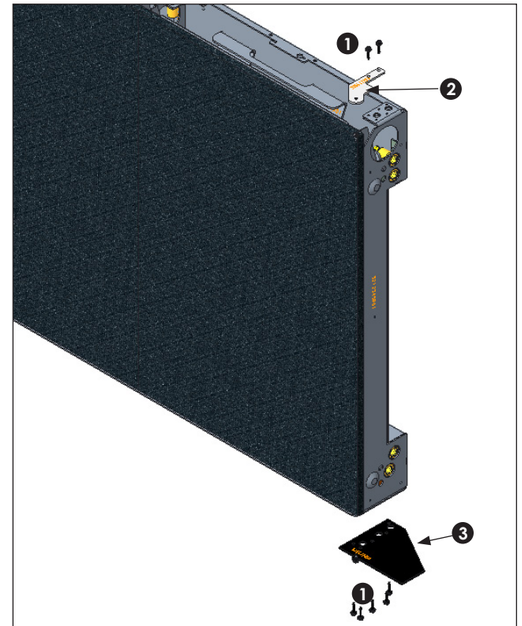
1. Open the wing beverage shroud and adjacent main standard sections' beverage shrouds. Refer to **Figure 16**.



1: Main standard section
2: Wing section

Figure 16: *Open Beverage Shrouds*

2. Attach the top pivot bracket and bottom pivot bracket to the main section with supplied TEK screws (#HC-1530) in provided pilot holes. Refer to **Figure 17**.



1: TEK screws (HC-1530)
2: Top pivot bracket
3: Bottom pivot bracket

Figure 17: *Attach Pivot Brackets*

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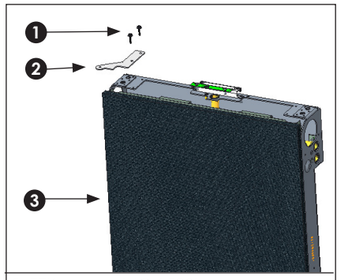
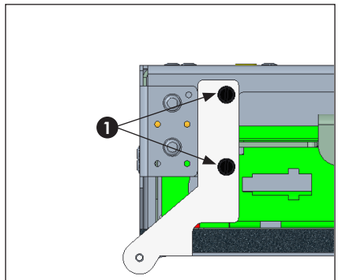
3. Attach the top offset pivot bracket to the wing section with supplied TEK screws (#HC-1530). Refer to **Figure 18** and **Figure 19**.



1: TEK screws (HC-1530)
2: Top offset pivot bracket
3: Wing cabinet

Figure 18: *Top Offset Pivot Bracket*



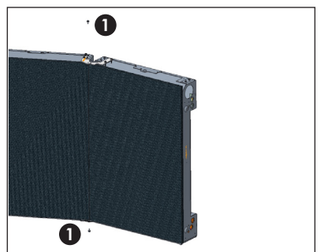
1: TEK screws (HC-1530)

Figure 19: *Top Offset Pivot Bracket (Top View Detail)*

4. Bring the wing section next to the main cabinet sections. Install a screw (#HC-1186) up through the bottom pivot bracket into the bottom perimeter of the wing section. Refer to **Figure 20**.

5. Align the top of the wing section with the main section and install a screw (#HC-1186) through the top pivot bracket into the offset pivot bracket. Refer to **Figure 20**.

   The wing section is now free to rotate. If the wing section does not rotate, ensure the side section stitch bolts to the left of the wing section are removed.



1: TEK screws (HC-1530)

Figure 20: *Install HC-1186 Screws*

6. Place the top wing bracket on top of the assembled wing connection and secure into the main cabinet. Refer to **Figure 21**.

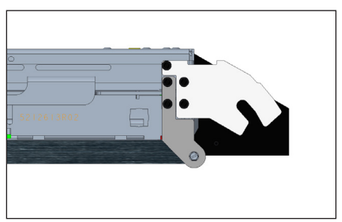
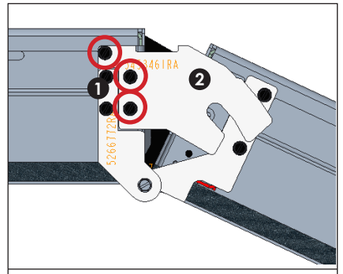


Figure 21: *Top Wing Bracket*

7. Set the wing at the necessary angle to engage the left and right sections. Refer to **Figure 22**.

   The hinge adds a gap (seam) between the module columns, which is necessary for top-access module removal via the module pan sliders.

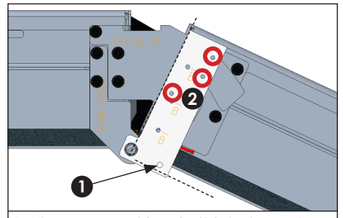
8. Once the desired angle is achieved, use the provided jig to mark pilot hole locations for installing top and bottom TEK screws to lock the angle in place. Place the jig over the screw and align the jig to the section's face and perimeter. Pilot holes should be drilled to 0.141" diameter or smaller. Refer to **Figure 23** and **Figure 24**.



1: HC-1530 screw locations
2: Top wing bracket (0-45 degrees)

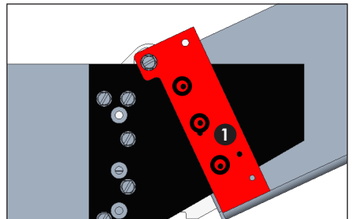
Figure 22: *Set Wing Angle*

Note: Use a screwdriver or drill bit to align bracket to face.



1: Place screwdriver in this hole and place against face to align bracket
2: Pilot hole locations for top bracket

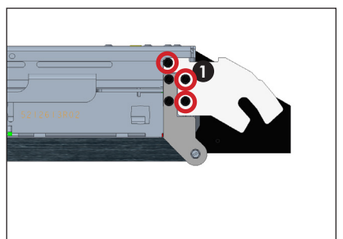
Figure 23: *Jig Placement and Pilot Hole Locations (Top)*



1: Pilot hole locations for bottom bracket

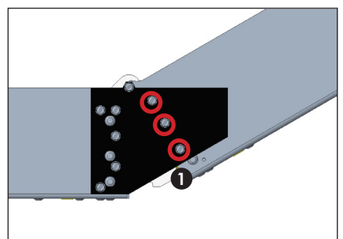
Figure 24: *Jig Placement and Pilot Hole Locations (Bottom)*

9. Install TEK screws (#HC-1530) through the upper and lower wing brackets into the vertical perimeter of the wing to keep the wing from rotating. Refer to **Figure 25** and **Figure 26**.



1: Upper TEK screw @ 3

Figure 25: *Install Upper TEK Screws*



1: Lower TEK screw @ 3

Figure 26: *Install Lower TEK Screws*

10. Loosen and remove the upper hinge after all TEK screws are tightened down. The hinge needs to be removed to allow the beverage shrouds to close completely. Refer to **Figure 27** and **Figure 28**.

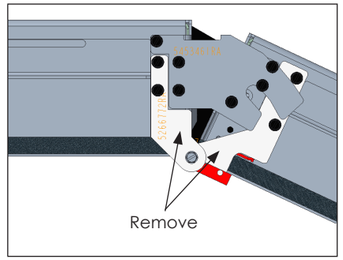


Figure 27: *Remove Upper Hinge*

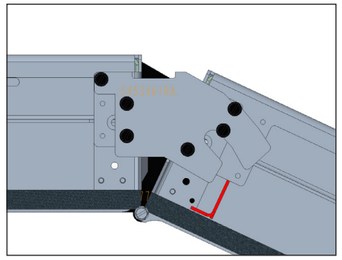


Figure 28: *Upper Hinge Removed*

11. Close and secure the beverage shrouds.

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Electrical

Power Termination

Junction boxes ship separately from the display and are supplied for landing power. Refer to the contract-specific Riser Diagram for junction box locations within the display. Field power must be terminated in each junction box. The connections from the breaker panel to each junction box must be performed by a licensed electrician. Refer to **Figure 1**.

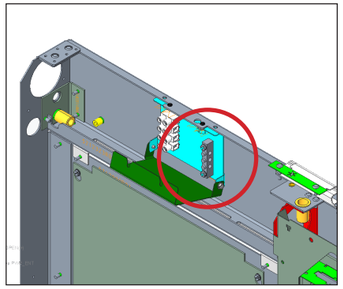


Figure 1: *Power Entrance*

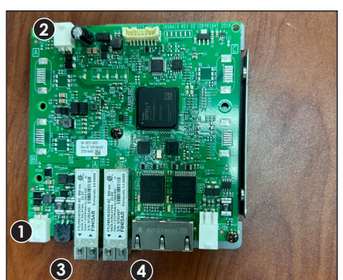
The junction box can power multiple sections on a three-phase 20 A circuit. Power is daisy-chained internally with factory-supplied harnessing. Refer to the contract-specific Riser Diagram for field power locations within the display.

Signal Interconnection

1. Use the supplied hardware to place the ProLink Router(s) (PLRs) at the locations specified on the contract-specific Signal Interconnect Drawing and Riser Diagram. Refer to **Figure 2**.
2. Route the field fiber cable (from the control location) through the signal entrance, then terminate. Refer to **Figure 3**.
3. Use the supplied power cable (Daktronics part number 0A-2453-7005) to connect the PLR to the power supply fan connector. Refer to **Figure 4**.
4. Connect the field-terminated fiber cable to Fiber Port A on the first PLR in the system (typically the upper-right corner of the first cabinet when viewed from the rear). Refer to **Figure 4**.
5. Route the supplied fiber cables from Fiber Port B on the first PLR to Fiber Port A on the next PLR. Refer to **Figure 4**. Depending on the number of PLRs, this process is continued until Fiber Port A on the final PLR in the chain is connected. Refer to the contract-specific Signal Interconnect Drawing.

Figure 2: *PLR*

Figure 3: *Fiber Cable*



1: SATA Port A
2: SATA Port B
3: Fiber Port A
4: Fiber Port B

Figure 4: *PLR*

6. Route the supplied RJ45 cable from Port A on the PLR to Port A on the first module. RJ45 connection between cabinets may be required depending on the overall display size. Use the supplied RJ45 cables to connect the cabinets. Refer to **Figure 5**. Cabinet-to-cabinet RJ45 connections are made via cables secured to the top of each module column. Refer to the contract-specific Signal Interconnect Drawing for data routing information.

Figure 5: *RJ45 Cable*

Service

Component Locations

Refer to the **RTN-3000 Series Section Basics Quick Guide (DD5210841)** for component locations.

Display Access

1. Disconnect power to the display.
2. Remove the module. Refer to **Front-Access Module Removal (p.1)** **or Top-Access Module Removal (p.2)**.
3. Remove the module pan. Refer to **Module Pan Removal (p.2)**
4. Remove the component(s). Refer to **Power Supply Removal (p.2)** or **Hub Board/Receiver Card Removal (p.2)**.
5. Reverse the steps in **Module Pan Removal (p.2)** to reinstall the module pan.
6. To reinstall the module, align the connector on the rear of the module with the corresponding connector on the panel. Place a gloved hand flat against the module face and press firmly. Refer to **Figure 6**.

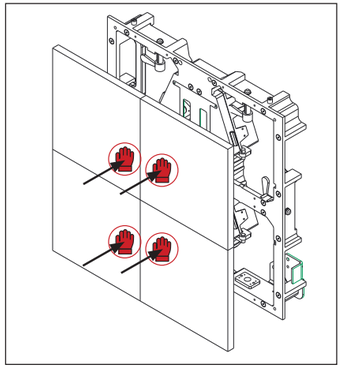


Figure 6: *Power Entrance*

Component Access

Front-Access Module Removal

Note: Refrain from attaching the module removal tool to any highly magnetic objects, as it is difficult to disengage the tool from these objects.

1. Disconnect power to the display.
2. Turn the knob on the module removal tool clockwise to disengage the tool. Refer to **Figure 7**.
3. Center the tool on the face of the module to be removed and turn the knob on the tool counterclockwise to engage the magnets. Refer to **Figure 8**.

Figure 7: *Module Removal Tool*

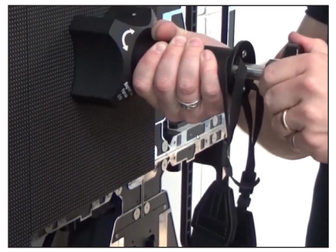


Figure 8: *Remove Module*

Note: The module safety lanyard should already be attached but replace as shown in **Figure 9** if needed.

4. Pull the module straight out until it disengages from the display face.
5. Detach the lanyard from the removed module.

Note: Front-access only allows for the removal and replacement of modules. To access other components, follow the instructions in **Module Pan Removal (p.2)**.

Reverse these steps to install a module in a front-access display.

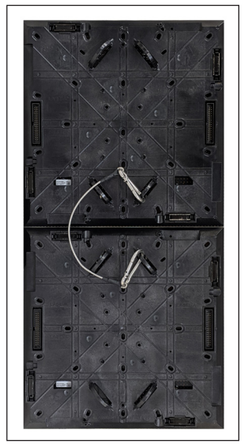


Figure 9: *Module Safety Lanyard*

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DAKTRONICS

Top-Access Module Removal

1. Disconnect power to the display.
2. Remove the module pan. Refer to **Module Pan Removal (p.2)** for instructions.
3. Turn the top spring latch a $^{3}/_{4}$ turn counterclockwise with a small flathead screwdriver.
4. Disengage the module from the panel:

   Note: The module safety lanyard should already be attached but replace as shown in **Figure 9** if needed.

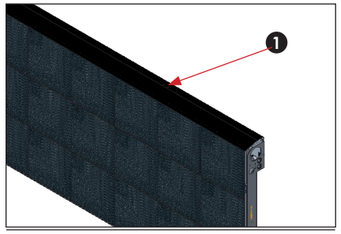
   For a module without a latch, hold on to the finger loops on the module and gently push the module straight out toward the display face.

Reverse these steps to install a module in a top-access display.

Module Pan Removal

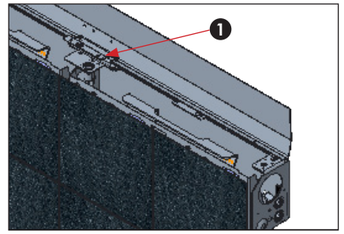
Pay special attention to the following instructions to avoid damaging any connectors or components.

1. Disconnect power to the display.
2. Release the beverage shroud security screw with a security screw driver. Leave the beverage shroud in a flipped-up position or remove it by rotating it up and unhooking the spring-loaded hinge pins. Refer to **Figure 10** and **Figure 11**.



1: Beverage shroud security screw

Figure 10: *Open Beverage Shroud*



1: Removable hinge

Figure 11: *Remove Beverage Shroud*

3. Disconnect the power and signal cables for the column to be removed.
4. Attach one end of a safety lanyard to the labeled attachment point on the top of the column and the opposite end of the lanyard to the labeled attachment point on the adjacent column to prevent the column from falling if dropped. Refer to **Figure 9**.
5. Maintain a firm grip on the column and pull away from the display to disengage the column from the attachment points. The column can be moved to an area for servicing.

Reverse these steps to install a module pan.

Hub Board/Receiver Card Removal

1. Disconnect power to the display.
2. Remove the module pan on the panel to be serviced. Refer to **Module Pan Removal (p.2)**.
3. Disconnect the Cat 6 cables from the RJ45 jacks on the hub board. Refer to **Figure 12**.
4. Disconnect the power supply from the hub board via one of the following methods:
   - Use a Phillips screwdriver to loosen the connections on the power supply and disconnect the cables extending from the board. Refer to **Figure 12**.
   - Open levers on the terminal block and disconnect the cables extending from the board. Refer to **Figure 12**.
5. Use a Phillips screwdriver to remove the screws securing the hub board to the component front-access assembly.

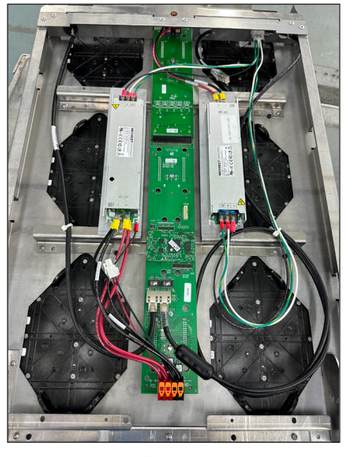


Figure 12: *Hub Board*

Reverse these steps to install a hub board.

Power Supply Removal

1. Disconnect power to the display.
2. Remove the module pan on the panel to be serviced. Refer to **Module Pan Removal (p.2)**.
3. Use a Phillips screwdriver to loosen and remove the power cables extending from the power supply.
4. Use a Phillips screwdriver to remove the screws securing the power supply strap to the panel.

Reverse these steps to install a power supply.

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Tools

Part	Part Description
$^{5}/_{16}$" Nutdriver or bit (Daktronics part number TH-1156) or 8 mm nutdriver or bit	Attaches borders
Cordless screw gun	Attaches borders to sections
Crane or lift	Lifts sections from crates and holds sections for border attachment

Part Identification

There are two flat side border sizes for the RTN-3000 display series:

- 2-High (Daktronics part number 0M-5219703)
- 3-High (0M-5219701)

Refer to **Figure 1**.

There are two transition border sizes for the RTN-3000 display series:

- 2-High (0M-5219707)
- 3-High (0M-5219705)

Refer to **Figure 2**.

Part numbers are etched into the metal on each border for identification purposes.

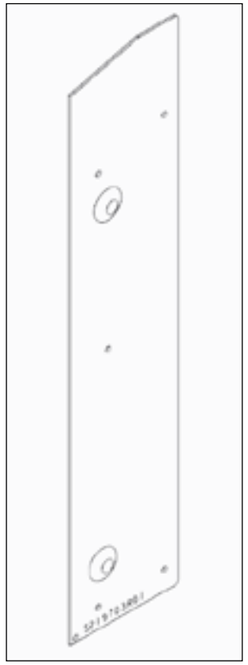

Figure 1: *Flat Side Border*

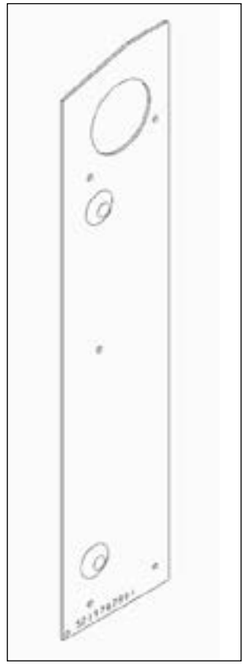

Figure 2: *Transition Border*

Border Installation

Flat side borders can be installed before or after display sections are mounted to the structure. Transition borders are used when there is a gap between display sections. Transition borders must be installed prior to installing any adjacent display sections.

1. Select the correct border size to match the display section size.
2. Use a clean rag to wipe off the perimeter of the cabinet receiving the border.
3. Bring the border into position. The formed offset feature should be positioned to fit over the protruding alignment cone. Refer to **Figure 3**.

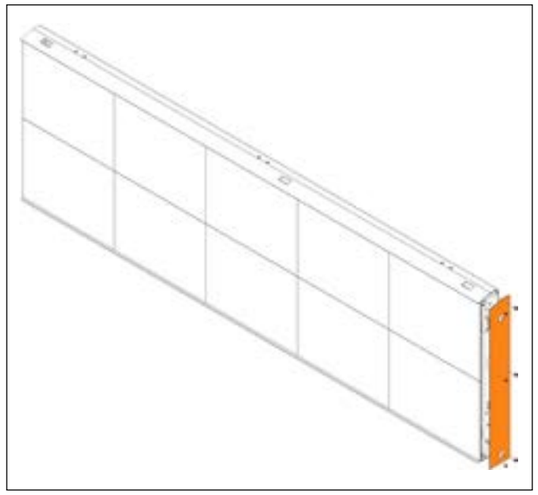

Figure 3: *Install Border*

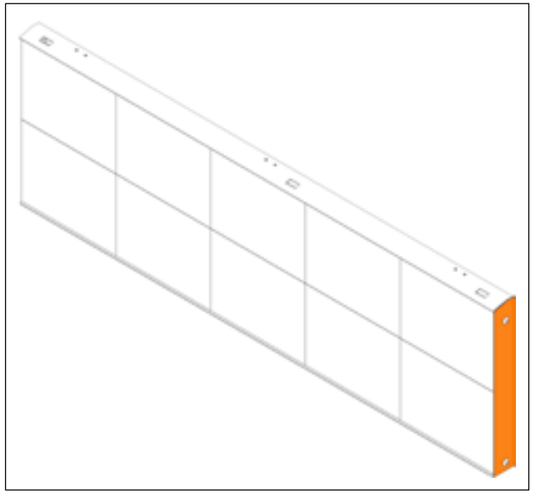

Figure 4: *Border Installed*

4. Ensure the pre-punched holes in the border align with the pilot holes in the section perimeter. With the holes aligned, use #10-16 x 0.375" tap screws (Daktronics part number HC-1186) to fasten the border to the section perimeter in all pre-punched hole locations in the border. Refer to **Figure 4** for the finished appearance.

Corner/Gap Consideration

1. Cut a notch in both ends of a flexible tube (EC-1252). Ensure enough of a notch is cut in each end to avoid the hat channel in each cabinet and for the ribs on the tube to engage the cabinet pass-through holes.
2. Use the tube to cover any exposed cabling between corners or gaps. Refer to the contract-specific Shop Drawing for corner or gap locations.

Note: Ensure at least 2" of the tube extends into each cabinet and the notch on the tube faces down.

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B Reference Drawings

Refer to **Numbering Conventions (p.1)** for information regarding how to read the drawing number. These drawings offer general information pertaining to most RTN-3000 series displays and are listed in numeric order. Any contract-specific drawings take precedence over the general drawings.

Block Diagram; 3 High Cabinet **DWG-5128550**
Block Diagram; 2 High Cabinet **DWG-5169082**
RTN-3000 Accessory Install Details **DWG-5213293**
Assy; Power Entrance **DWG-5224472**
Assy; PLRs **DWG-5224473**
Power Entrance Component Placement **DWG-5262615**
Block Diagram; 1 Mod Wide Cabinet **DWG-5279402**
Recommended Tools and Hardware **DWG-5338167**

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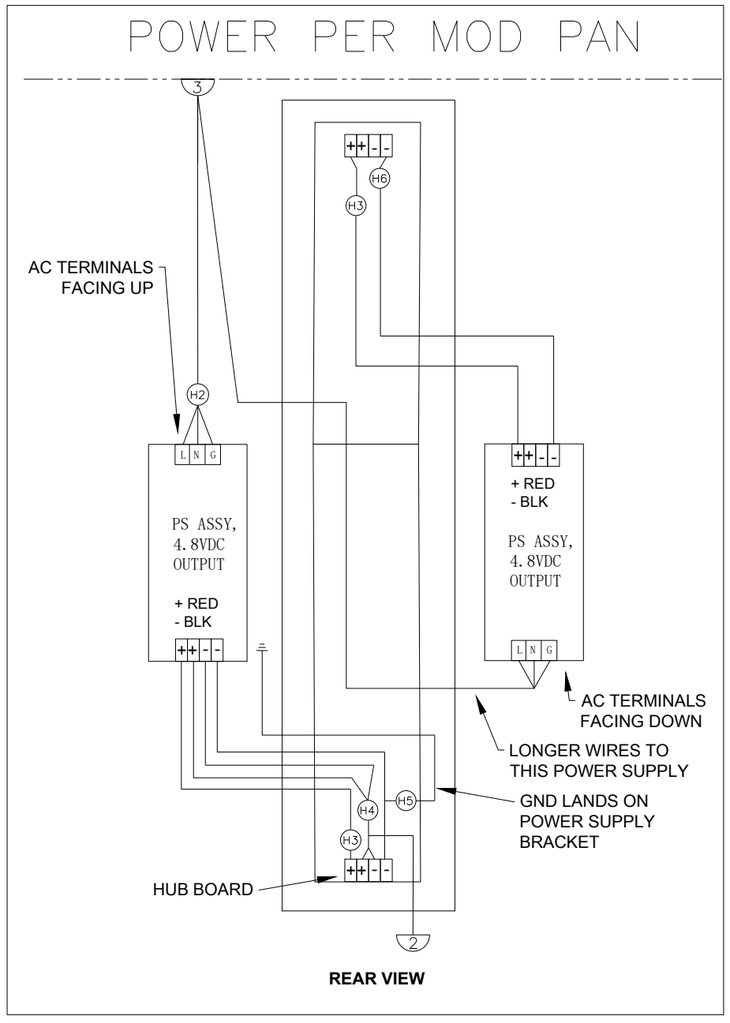
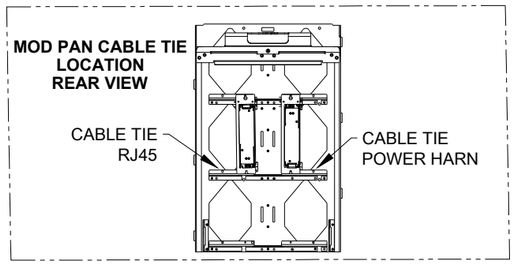
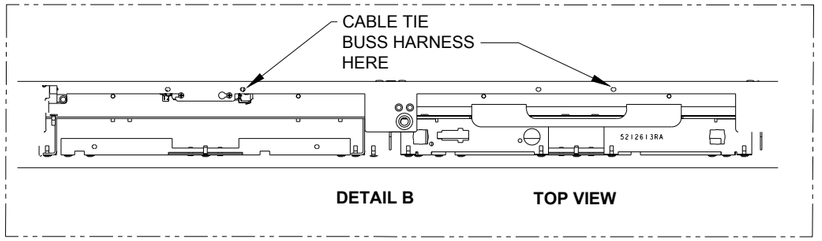
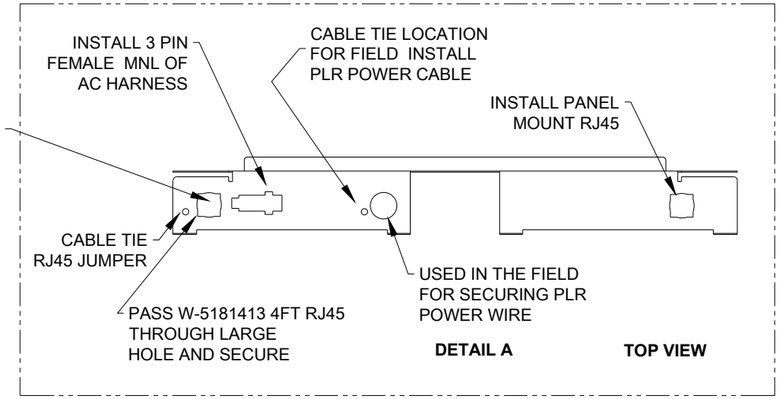
POWER PER MOD PAN



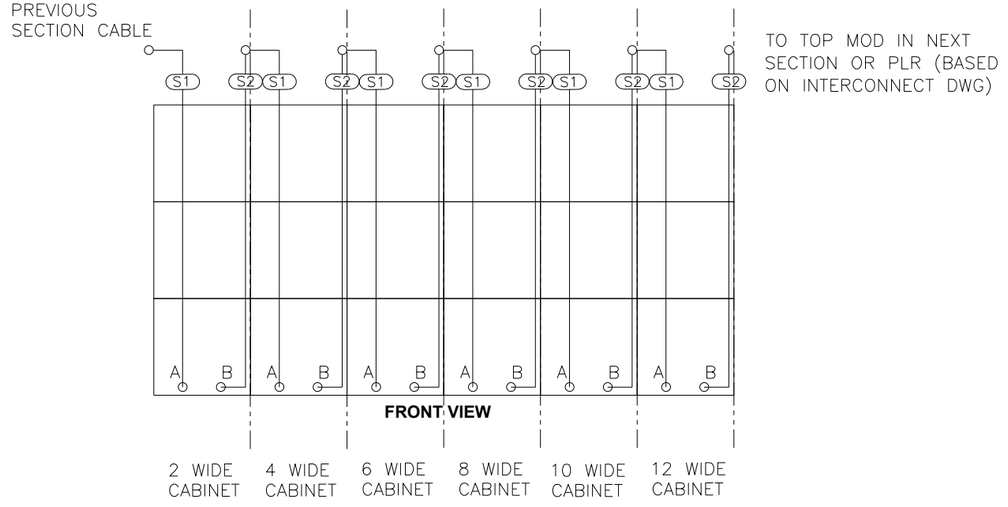
REAR VIEW







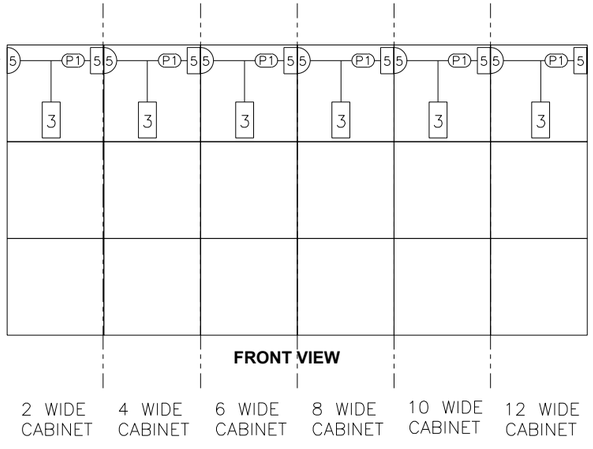
SIGNAL



S1 W-5181413
CABLE, RJ45 CAT6, SHIELDED, BLK, 4FT W/FERRITE

S2 W-4759532
CABLE;RJ45 PLUG TO PANEL CAT5E, 2 FT, SHIELDED

POWER BUSS HARNESS REFER TO DETAIL B FOR CABLE TIE INFO



HARN/CABLE LIST PER COLUMN

QTY	LABEL	DESC
1	P1	REFER TO TABLE A
1	H2	0A-2453-7003
1	H3	0A-2453-7008
1	H4	0A-2453-7006
1	H5	0A-2453-7007
1	H6	0A-2453-7009
1	S1	W-4759532
1	S2	W-5181413

TABLE A

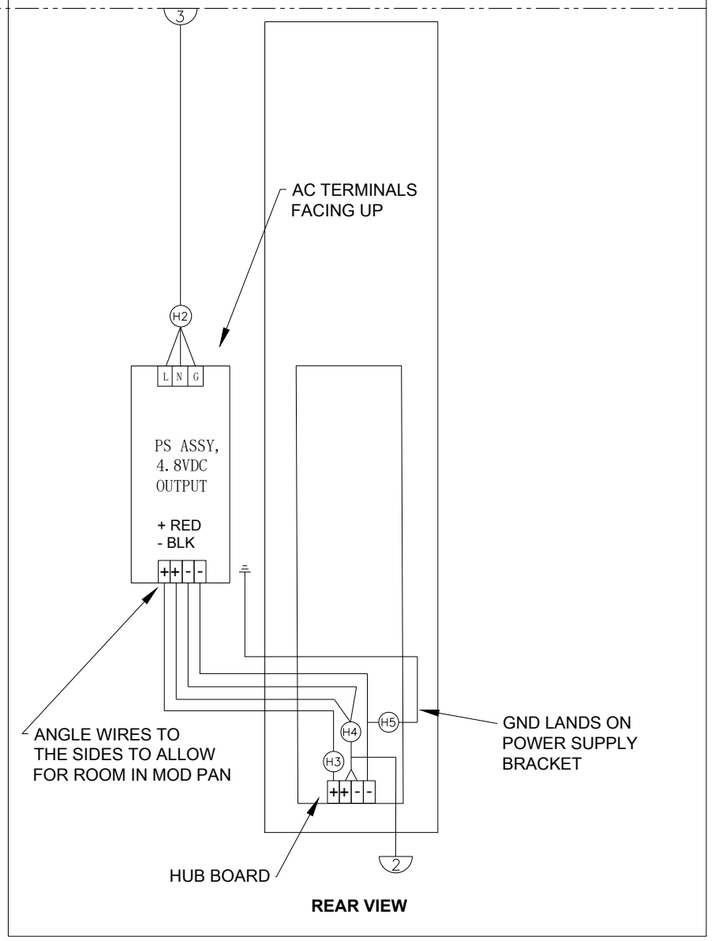
2 MOD WIDE	0A-2453-7016
ALL OTHER SIZES	0A-2453-7001

REV	DATE:		BY:
01	1 MAY 23	CN159024 ADDED CABLE TIE INFO AND REMOVED BUSS HARNESS FROM MOD PAN WIRING VIEW	JSF

THIRD ANGLE PROJECTION

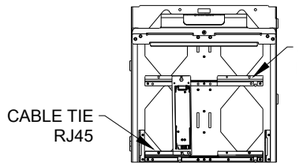
PROJECT:	RTN-C1			
TITLE:	BLOCK DIAGRAM RTN-C1 3 HIGH CABINET			
DATE:	29 AUG 22	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	NTS	DO NOT SCALE DRAWING		01
DESIGN:	JFIXSEN	JOB NO.	FUNC - TYPE - SIZE	5128550
DRAWN:	JFIXSEN	P2453	R - 01 - B	

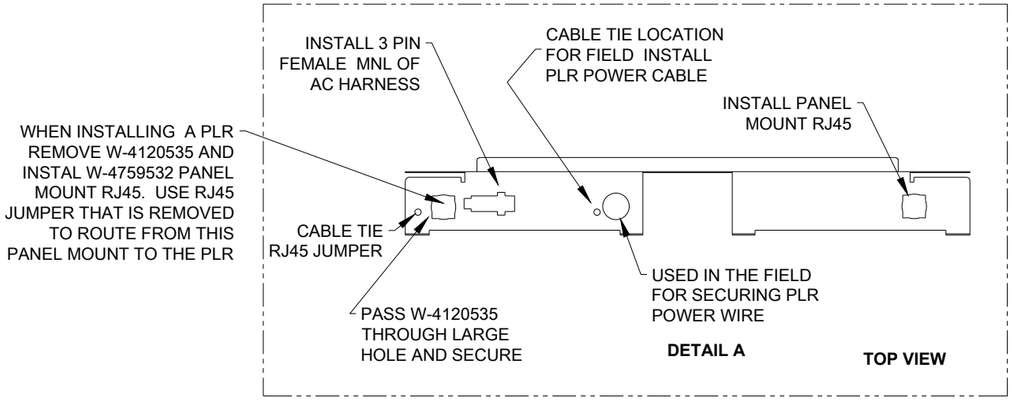
POWER PER MOD PAN

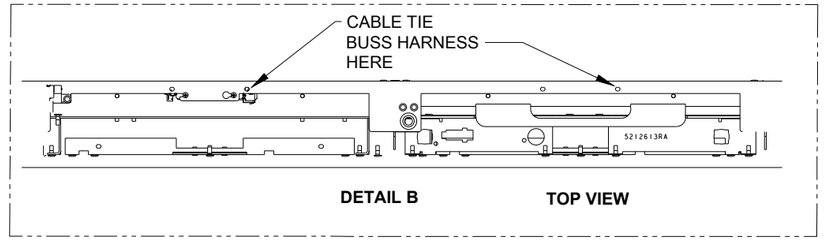


REAR VIEW

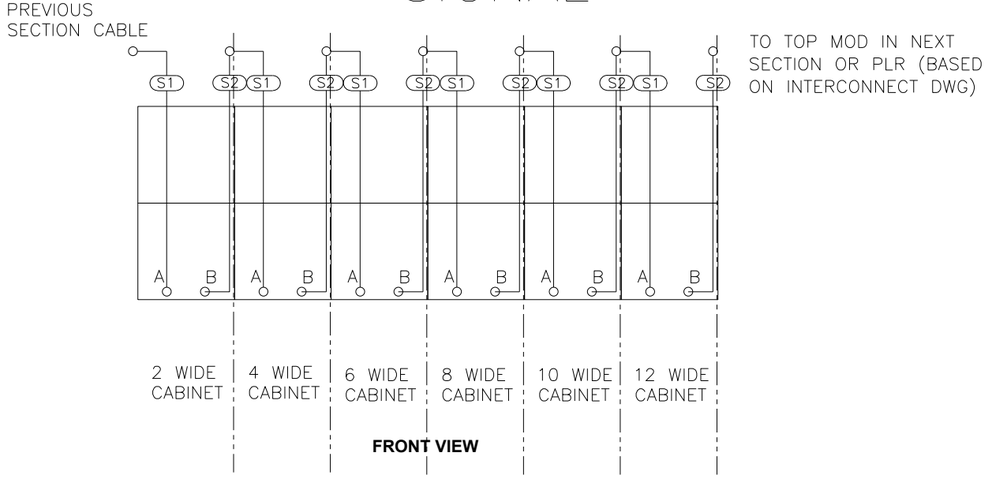
MOD PAN CABLE TIE LOCATION REAR VIEW







SIGNAL

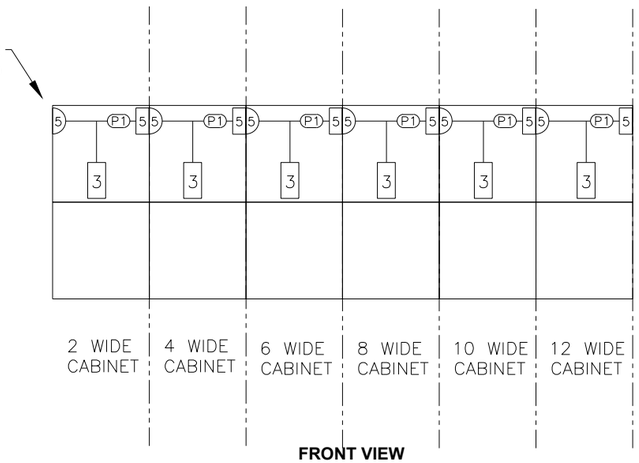


FRONT VIEW

S1 W-4120535
CABLE ASSY, RJ45 CAT6, SHIELDED, BLK, 3FT

S2 W-4759532
CABLE;RJ45 PLUG TO PANEL CAT5E, 2 FT, SHIELDED

POWER BUSS HARNESS REFER TO DETAIL B FOR CABLE TIE INFO



FRONT VIEW

HARN/CABLE LIST PER COLUMN

QTY	LABEL	DESC
1	P1	REFER TO TABLE A
1	H2	0A-2453-7002
1	H3	0A-2453-7008
1	H4	0A-2453-7006
1	H5	0A-2453-7007
1	S1	W-4120535
1	S2	W-4759532

TABLE A

2 MOD WIDE	0A-2453-7016
ALL OTHER SIZES	0A-2453-7001

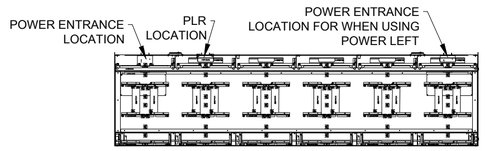
REV	DATE:		BY:
01	1 MAY 23	CN159024 ADDED CABLE TIE INFO AND REMOVED BUSS HARNESS FROM MOD PAN WIRING VIEW	JSF

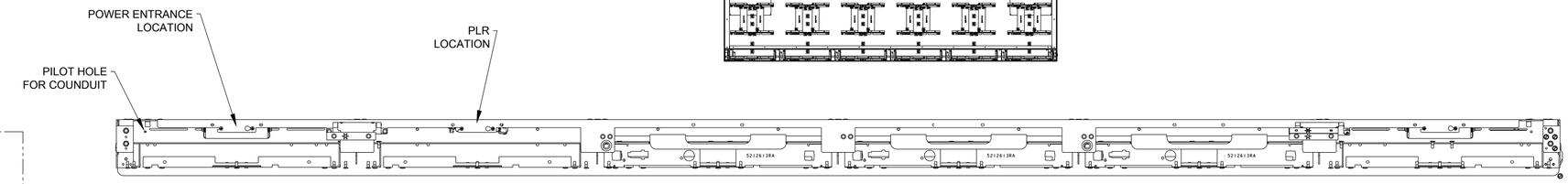
THIRD ANGLE PROJECTION

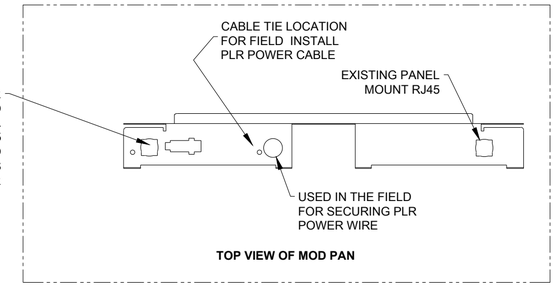
PROJECT:	RTN-C1			
TITLE:	BLOCK DIAGRAM RTN-C1 2 HIGH CABINET			
DATE:	14 NOV 22	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	NTS	DO NOT SCALE DRAWING		01
DESIGN:	JFIXSEN	JOB NO.	FUNC - TYPE - SIZE	
DRAWN:	JFIXSEN	P2453	R - 01 - B	5169082

FIELD INSTALLATION

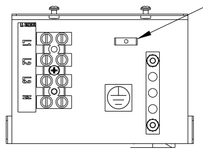
TYPICAL LEFT OR RIGHT SIDE OF CABINET. REMOVE MODULE COLUMN PRIOR TO ASSEMBLY







TOP VIEW OF MOD PAN

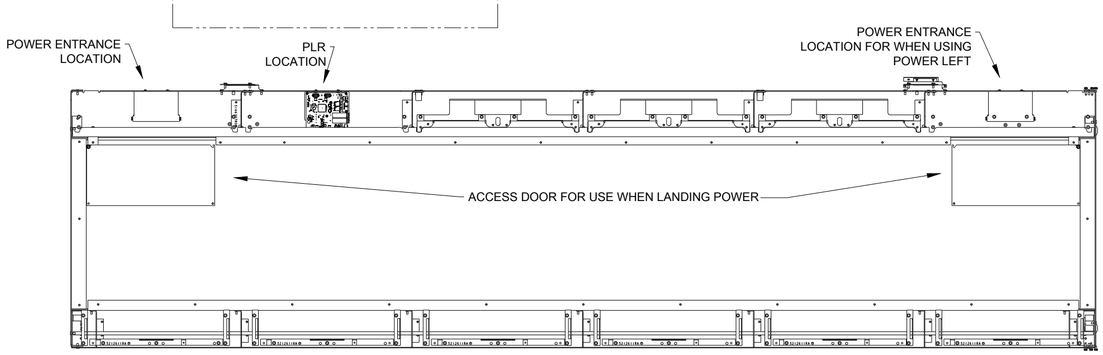


FRONT VIEW HDWR ASSEMBLY

PLR MOUNTING LIMITATIONS

POWER ENTRANCE CAN BE INSTALLED IN ANY SIZE CABINET.

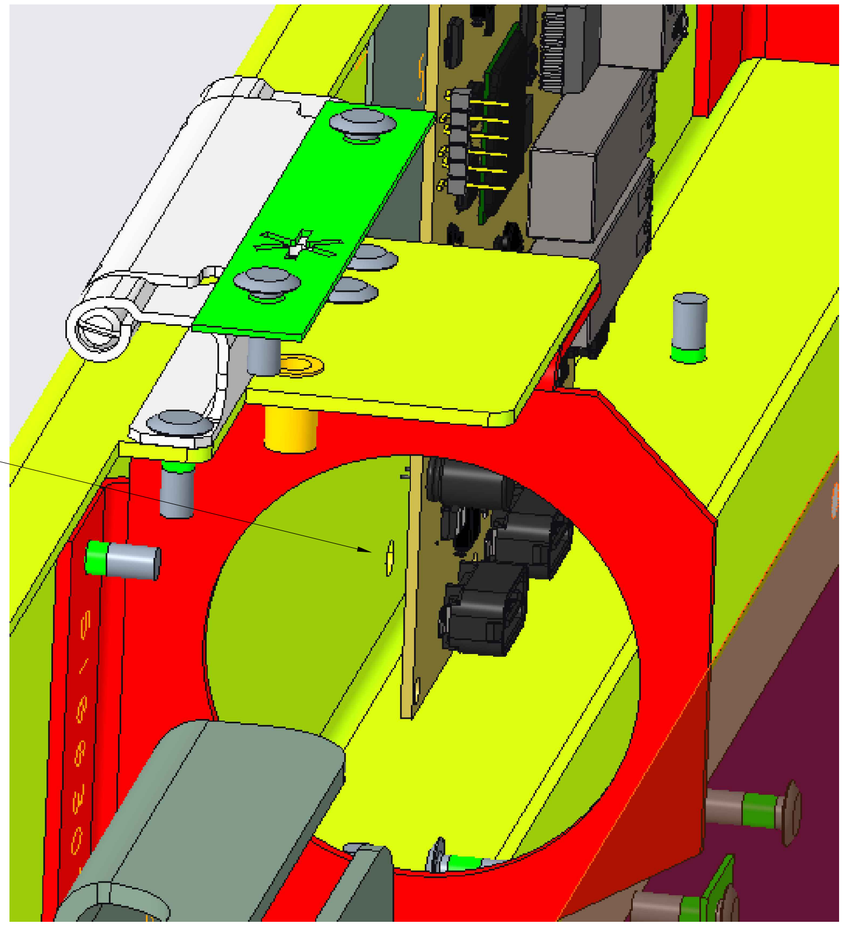
***PLR REQUIRES A 6 MOD WIDE OR WIDER CABINET IN ORDER TO BE INSTALLED.

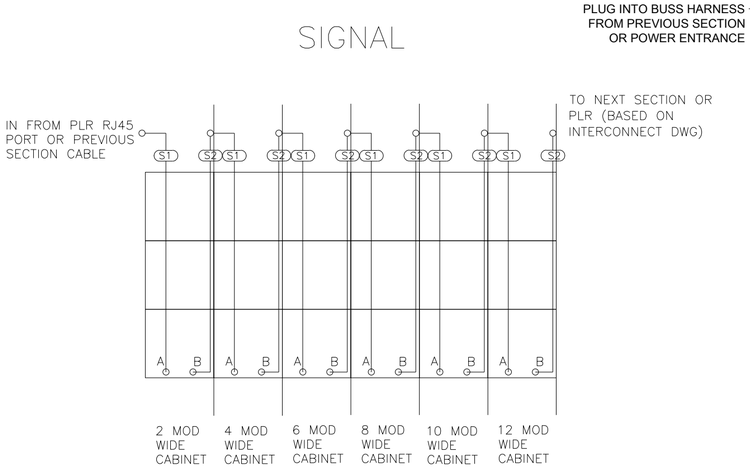


FRONT VIEW WITH MOD COLUMNS REMOVED

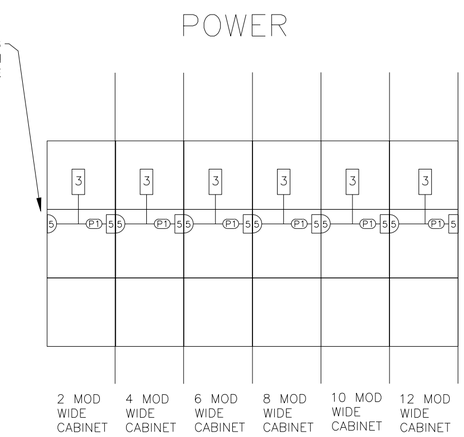
PLR INSTALL

CUT CABLE TIE HOLDING MAIN BUSS HARNESS AND INSTALL CABLE TIE ANCHOR AS SHOWN BELOW.





FRONT VIEW



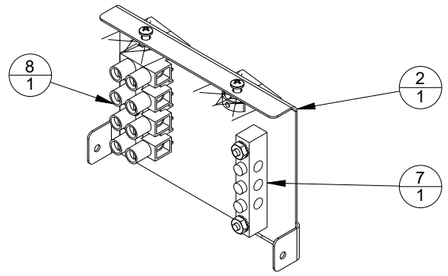
FRONT VIEW

REV	DATE:		BY:
01	2 MAY 23	CN159024 UPDATED CABLE TIE INFORMATION	JSF

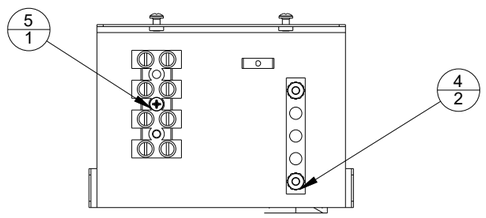
THIRD ANGLE PROJECTION

PROJECT:	RTN-3000			
TITLE:	RTN-3000 ACCESSORY INSTALL DETAILS			
DATE:	14 FEB 23	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	NTS	DO NOT SCALE DRAWING		01
DESIGN:	JFIXSEN	JOB NO.	FUNC - TYPE - SIZE	
DRAWN:	JFIXSEN	P2453	R - 07 - C	5213293

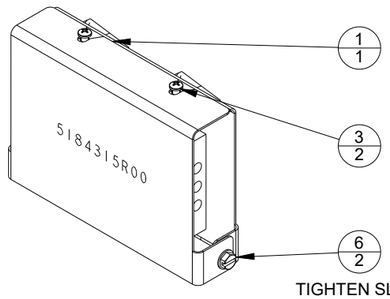
0A-2453-7012			
INDEX	NAME	QTY	DESCRIPTION
1	0M-5184315	1	PWR ENTRANCE COVER; RTN C1
2	0S-5184338	1	PWR ENT BRKT; RTN C1
3	HC-1179	2	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
4	HC-1238	2	NUT, #6-32 HEX KEPS, ZN PLTD
5	HC-1269	1	MACH SCR, #6-32 X 0.875, PHIL PAN HEAD, BLK PLTD
6	HC-3601959	2	TAP SCR; #10-32 X 0.25, SLTD HEX WSHR HEAD, ZN PLTD
7	TB-1203	1	GROUND BAR, WS #6TO14, SLOTTED SET SCREW,3POS,WET
8	TB-3785819	1	TERMINAL, 4 POLE, 15MM SPACING, 50A 600V, 18-8AWG



ROTATED BASE ASSEMBLY



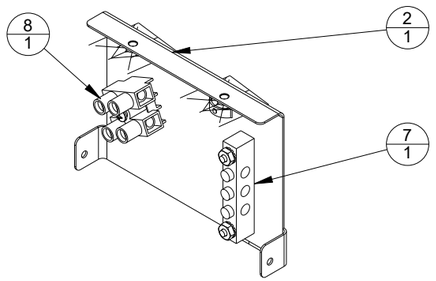
FRONT VIEW
HDWR ASSEMBLY



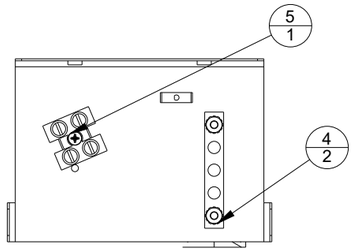
TIGHTEN SLIGHTLY
TO PROVIDE HINGE

COVER ASSEMLBY
ROTATED VIEW

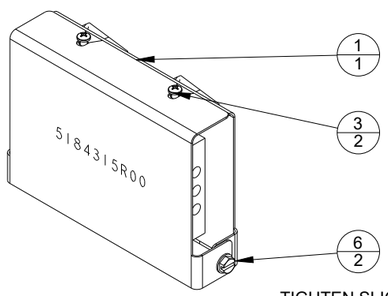
0A-2453-7013			
INDEX	NAME	QTY	DESCRIPTION
1	0M-5184315	1	PWR ENTRANCE COVER; RTN C1
2	0S-5184338	1	PWR ENT BRKT; RTN C1
3	HC-1179	2	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
4	HC-1238	2	NUT, #6-32 HEX KEPS, ZN PLTD
5	HC-1269	1	MACH SCR, #6-32 X 0.875, PHIL PAN HEAD, BLK PLTD
6	HC-3601959	2	TAP SCR; #10-32 X 0.25, SLTD HEX WSHR HEAD, ZN PLTD
7	TB-1203	1	GROUND BAR, WS #6TO14, SLOTTED SET SCREW,3POS,WET
8	TB-3565663	1	TERMINAL, 2 POLE, 15MM SPACING, 50A 600V, 18-8AWG



ROTATED BASE ASSEMLBY



FRONT VIEW
HDWR ASSEMLBY



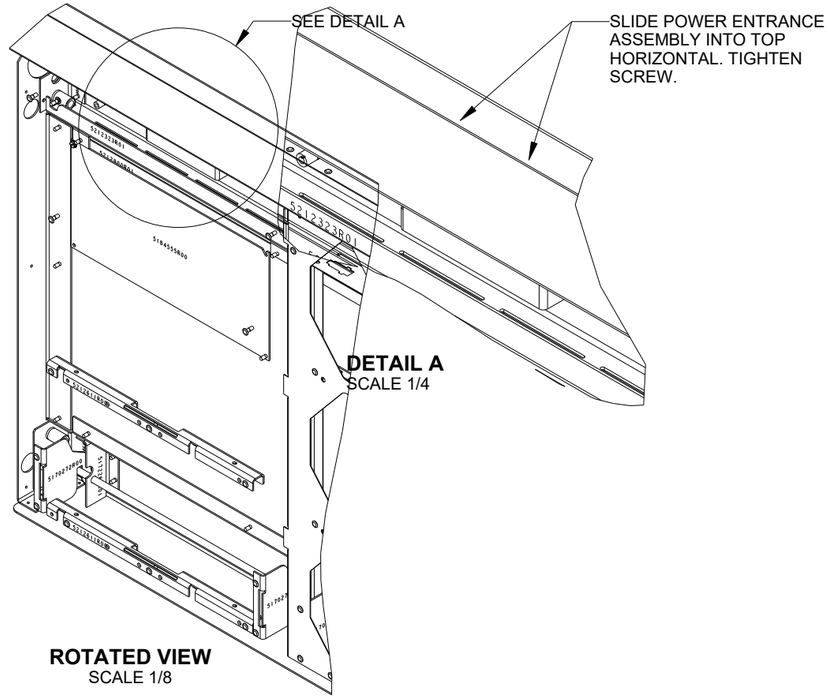
TIGHTEN SLIGHTLY
TO PROIVDE HINGE

COVER ASSEMBLY
ROTATED VIEW

HARDWARE SIZE	LOCATION	TORQUE
#6 (HC-1269)	TERM BLOCK	10 IN-LBS
#6 (HC-1179)	LID	10 IN-LBS
#6 (HC-1238)	GND BAR	25 IN-LBS
#10 (HC-3601959)	LID PIVOT	15 IN-LBS

FIELD INSTALLATION

TYPICAL LEFT OR RIGHT SIDE OF CABINET. REMOVE MODULE COLUMN PRIOR TO ASSEMBLY



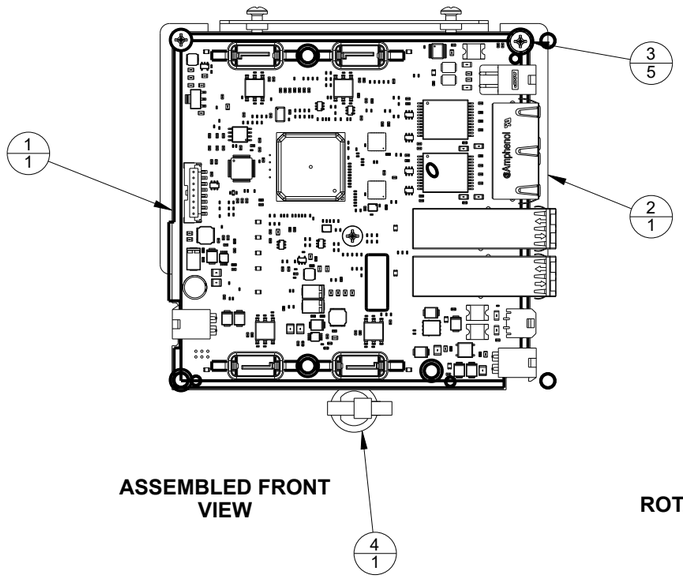
ROTATED VIEW
SCALE 1/8

REV:	DATE:	DESCRIPTION:	BY:

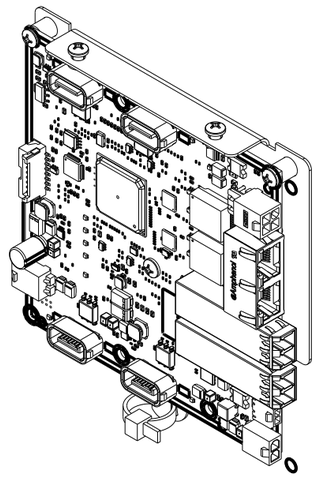
THIRD ANGLE PROJECTION

PROJECT:	RTN C1			
TITLE:	ASSY; POWER ENTRANCE; RTN C1			
DATE:	28-APR-23	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	1/3	DO NOT SCALE DRAWING		01
DESIGN:	RBJERKE	JOB NO.	FUNC - TYPE - SIZE	5224472
DRAWN:	RBJERKE	P2453	E - 07 - B	

0A-2453-7014			
INDEX	NAME	QTY	DESCRIPTION
1	0P-2072-6283	1	ASSY PLR 6283, PL8 RPCOM PHY
2	0S-5214598	1	PLR MNT; RTN C1
3	HC-1179	5	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
4	HE-3336944	1	CABLE TIE, 8" FIR TREE W/TIE HOLE



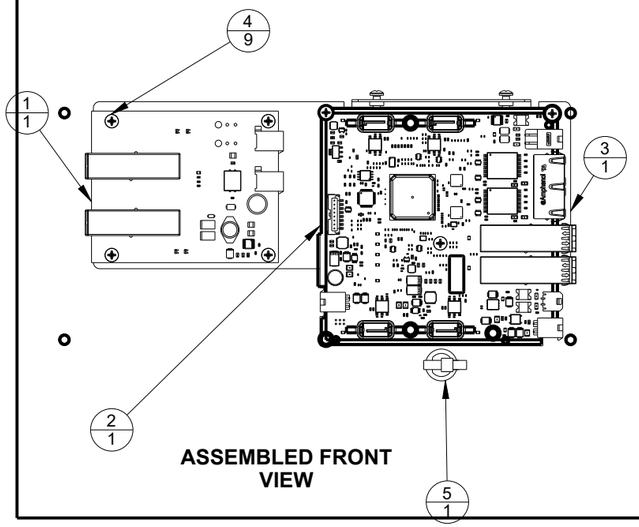
ASSEMBLED FRONT VIEW



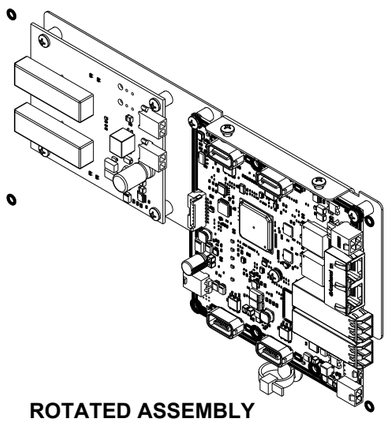
ROTATED ASSY VIEW

0A-2453-7015			
INDEX	NAME	QTY	DESCRIPTION
1	0P-2072-0002	1	FIBER OPTIC CONV; COATED, W/ 4GBPS FIBER TR
2	0P-2072-6283	1	ASSY PLR 6283, PL8 RPCOM PHY
3	0S-5219314	1	PLR MNT W/ SIGNAL CONV; RTN C1
4	HC-1179	9	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
5	HE-3336944	1	CABLE TIE, 8" FIR TREE W/TIE HOLE

HARDWARE	TORQUE
#6 (HC-1179)	10 IN-LBS



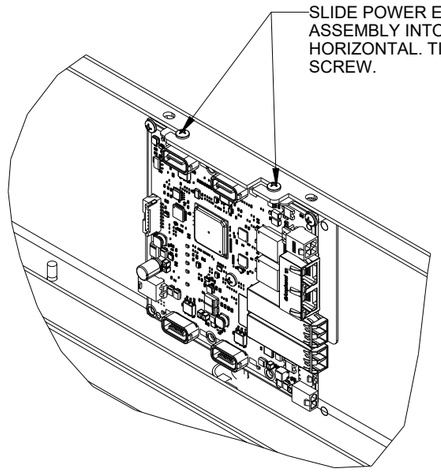
ASSEMBLED FRONT VIEW



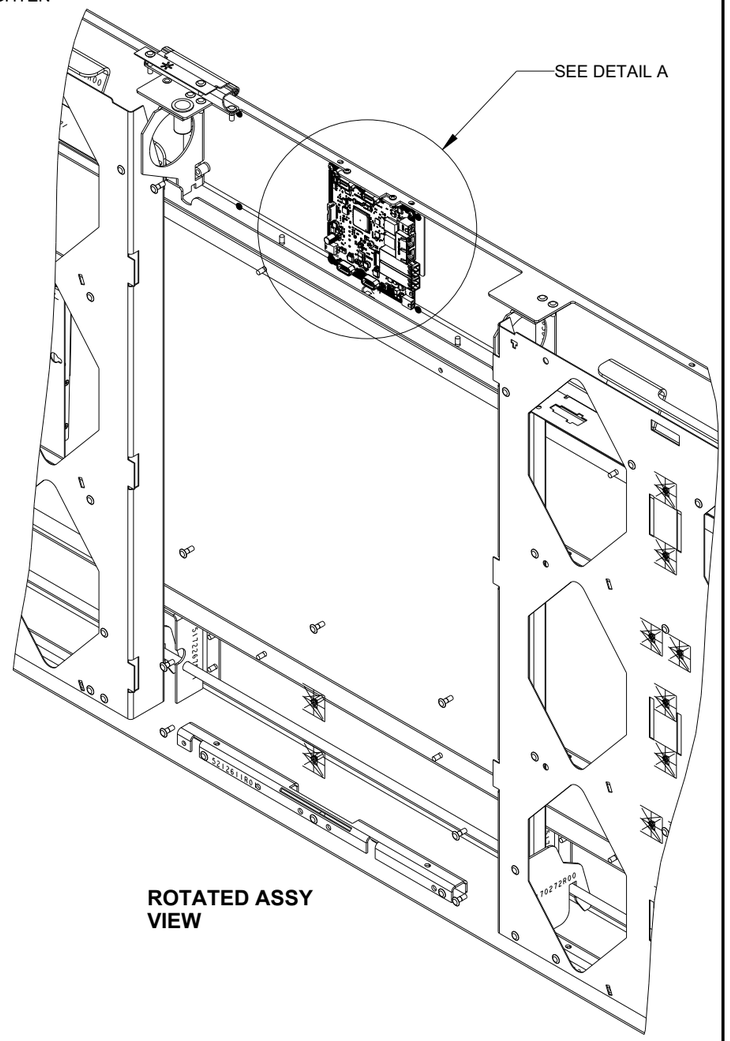
ROTATED ASSEMBLY VIEW

FIELD INSTALLATION

2ND COLUMN FROM LEFT SIDE OF CABINET. REMOVE MODULE COLUMN PRIOR TO ASSEMBLY



DETAIL A
SCALE 1/3



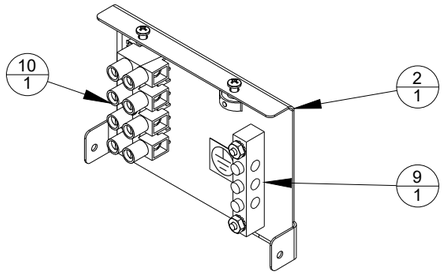
ROTATED ASSY VIEW

REV:	DATE:	DESCRIPTION:	BY:	
01	19 JUN 23	PER CN-161355: REPLACED 0P-2072-0001 WITH 0P-2072-6283	RLB 12814	

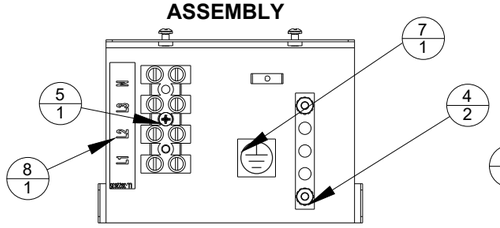
THIRD ANGLE PROJECTION

PROJECT:	RTN C1			
TITLE:	ASSY; PLRS; RTN C1			
DATE:	19-JUN-23	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	1/6	DO NOT SCALE DRAWING		01
DESIGN:	RBJERKE	JOB NO. P2453 / FUNC - TYPE - SIZE E - 07 - B	5224473	
DRAWN:	RBJERKE			

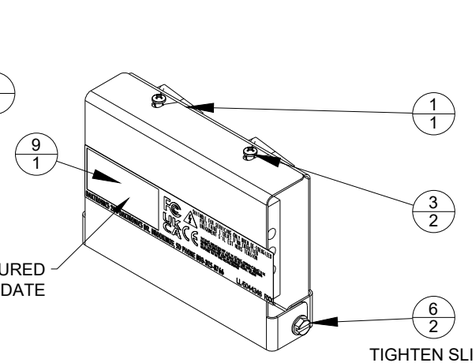
0A-2453-7012			
INDEX	NAME	QTY	DESCRIPTION
1	0M-5184315	1	PWR ENTRANCE COVER; RTN C1
2	0S-5184338	1	PWR ENT BRKT; RTN C1
3	HC-1179	2	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
4	HC-1238	2	NUT, #6-32 HEX KEPS, ZN PLTD
5	HC-1269	1	MACH SCR, #6-32 X 0.875, PHIL PAN HEAD, BLK PLTD
6	HC-3601959	2	TAP SCR; #10-32 X 0.25, SLTD HEX WSHR HEAD, ZN PLTD
7	LL-2812	1	LABEL, GROUND SYMBOL DECAL SHEET, PER DWG-1041433
8	LL-3922635	1	LABEL; 3P 120V J-BOX WIRE TERMINATION
9	LL-5044346	1	LABEL, 1 WINDOW SPEC, SHOCK, FCC, CE, UKCA
10	TB-1203	1	GROUND BAR, WS #6TO14, SLOTTED SET SCREW,3POS,WET
11	TB-3785819	1	TERMINAL, 4 POLE, 15MM SPACING, 50A 600V, 18-8AWG

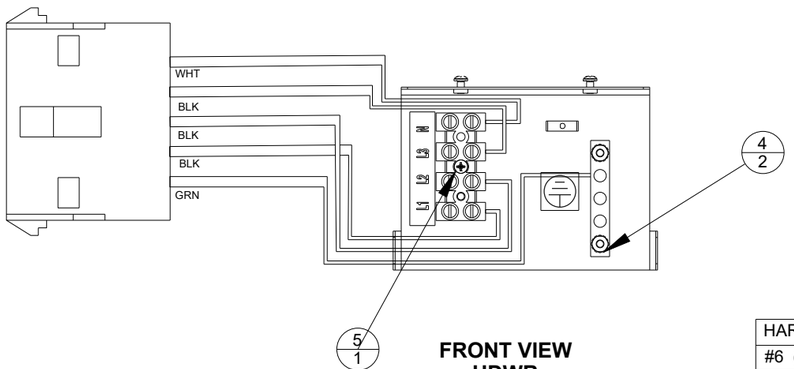


ROTATED BASE ASSEMBLY



FRONT VIEW HDWR ASSEMBLY

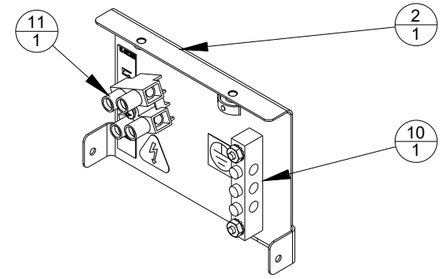




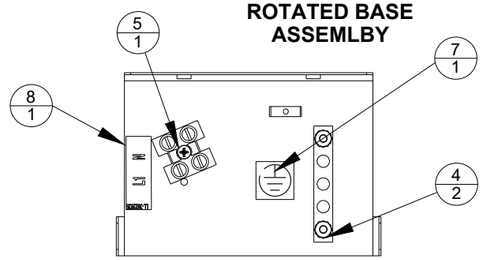
FRONT VIEW HDWR ASSEMBLY

HARDWARE SIZE	LOCATION	TORQUE
#6 (HC-1269)	TERM BLOCK	10 IN-LBS
#6 (HC-1179)	LID	10 IN-LBS
#6 (HC-1238)	GND BAR	25 IN-LBS
#10 (HC-3601959)	LID PIVOT	15 IN-LBS

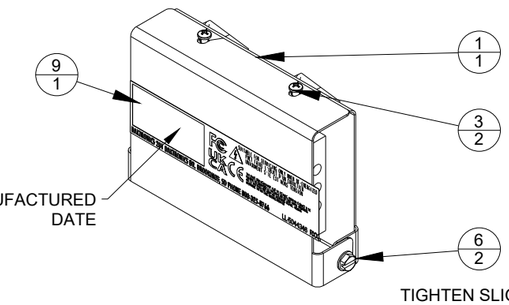
0A-2453-7013			
INDEX	NAME	QTY	DESCRIPTION
1	0M-5184315	1	PWR ENTRANCE COVER; RTN C1
2	0S-5184338	1	PWR ENT BRKT; RTN C1
3	HC-1179	2	MACH SCR, #6-32 X 0.250, PHIL PAN HEAD, BLK PLTD
4	HC-1238	2	NUT, #6-32 HEX KEPS, ZN PLTD
5	HC-1269	1	MACH SCR, #6-32 X 0.875, PHIL PAN HEAD, BLK PLTD
6	HC-3601959	2	TAP SCR; #10-32 X 0.25, SLTD HEX WSHR HEAD, ZN PLTD
7	LL-2812	1	LABEL, GROUND SYMBOL DECAL SHEET, PER DWG-1041433
8	LL-3922635	1	LABEL; 3P 120V J-BOX WIRE TERMINATION
9	LL-5044346	1	LABEL, 1 WINDOW SPEC, SHOCK, FCC, CE, UKCA
10	TB-1203	1	GROUND BAR, WS #6TO14, SLOTTED SET SCREW,3POS,WET
11	TB-3565663	1	TERMINAL, 2 POLE, 15MM SPACING, 50A 600V, 18-8AWG

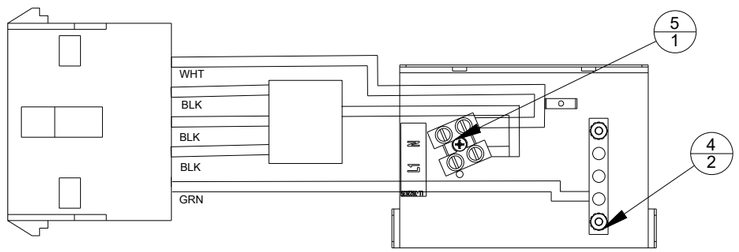


ROTATED BASE ASSEMLBY



FRONT VIEW HDWR ASSEMLBY



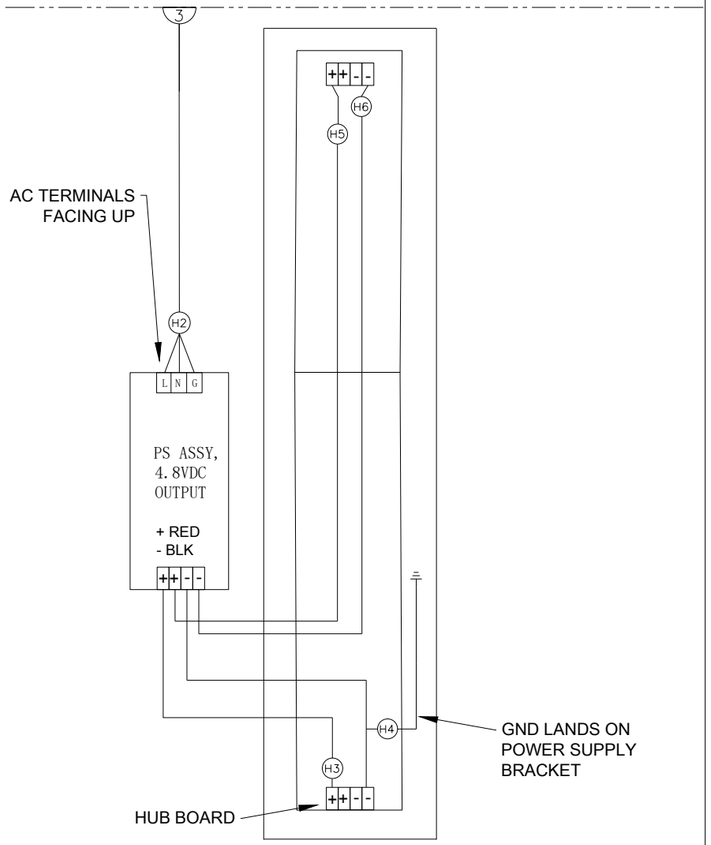


FRONT VIEW HDWR ASSEMLBY

THIRD ANGLE PROJECTION

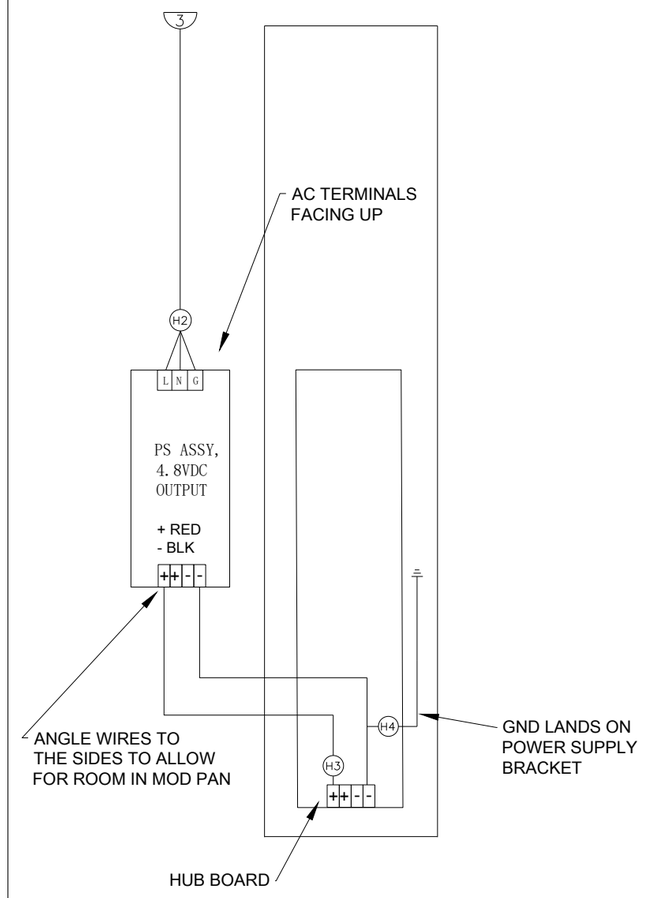
PROJECT:	RTN-C1		
TITLE:	POWER ENTRANCE COMPONENT PLACEMENT		
DATE: 28 APR 23	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: NTS	DO NOT SCALE DRAWING		00
DESIGN: JFIXSEN	JOB NO. P2453	FUNC - TYPE - SIZE E - 07 - B	5262615
DRAWN: JFIXSEN			

POWER PER MOD PAN 3H



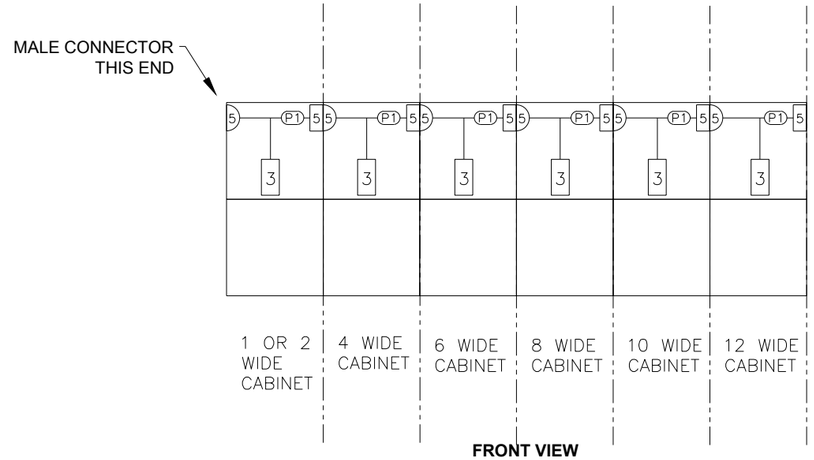
REAR VIEW

POWER PER MOD PAN 2H



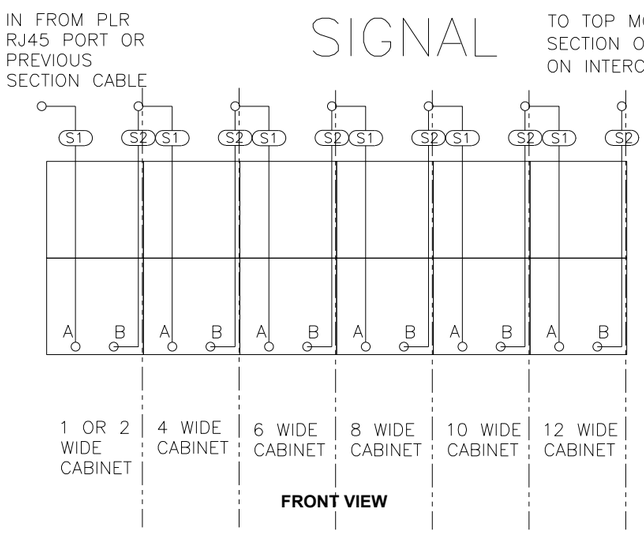
REAR VIEW

POWER BUSS HARNESS
REFER TO DETAIL B
FOR CABLE TIE INFO



FRONT VIEW

SIGNAL



FRONT VIEW

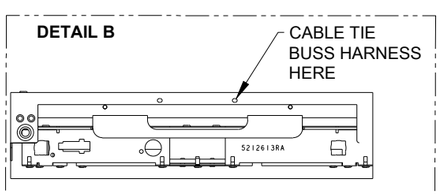
(S1) W-4120535
CABLE ASSY, RJ45 CAT6, SHIELDED, BLK, 3FT

(S2) W-4759532
CABLE;RJ45 PLUG TO PANEL CAT5E, 2 FT, SHIELDED

HARN/CABLE LIST PER COLUMN

QTY	LABEL	DESC
1	P1	0A-2453-7017
1	H2	0A-2453-7002
1	H3	0A-2453-7008
1	H4	0A-2453-7007
1	H5	W-4848119
1	H6	W-4848120
1	S1	W-4759532
1	S2	W-5181413

DETAIL B



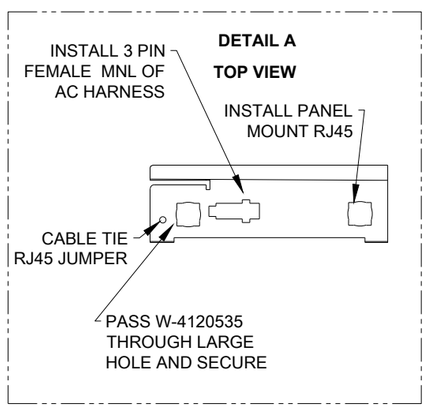
TOP VIEW

HARN/CABLE LIST PER COLUMN

QTY	LABEL	DESC
1	P1	0A-2453-7017
1	H2	0A-2453-7002
1	H3	0A-2453-7008
1	H4	0A-2453-7007
1	S1	W-4120535
1	S2	W-4759532

DETAIL A

TOP VIEW

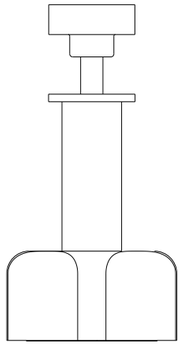


THIRD ANGLE PROJECTION

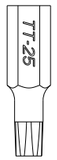
DAKTRONICS

PROJECT:	RTN-C1		
TITLE:	BLOCK DIAGRAM RTN-C1 1 MOD WIDE CABINET		
DATE:	14 NOV 22	DIM UNITS: INCHES [MILLIMETERS]	SHEET / REV
SCALE:	NTS	DO NOT SCALE DRAWING	00
DESIGN:	JFIXSEN	JOB NO. P2453	FUNC - TYPE - SIZE R - 01 - B
DRAWN:	JFIXSEN		5279402

REQUIRED TOOLS AND ALIGNMENT JIGS (PROVIDED)



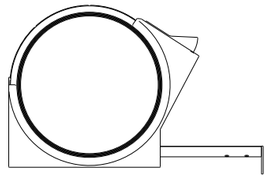
MOD REMOVAL TOOL
(PN: TH-3786574)



TORX T25 SECURITY BIT
PN: TH-1118

REQUIRED TOOLS (NOT PROVIDED)

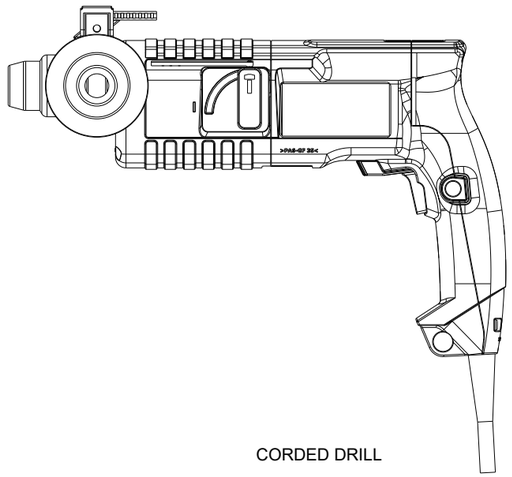
TOOL
SURGICAL (NITRILE) GLOVES: FOR MODULE HANDLING
STRING LINE
MARKER
1/4" [6MM] CENTER-LOCATING PUNCH
VACUUM



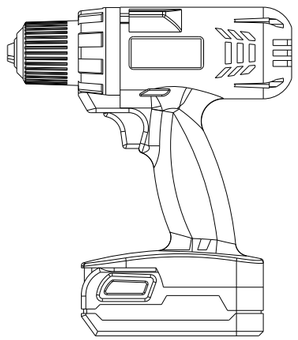
TAPE MEASURE

5/16" SOCKET

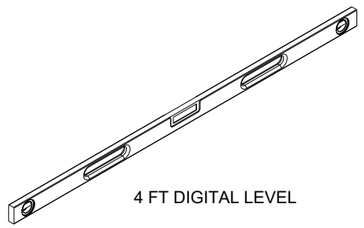
REQUIRED TOOLS (NOT PROVIDED)



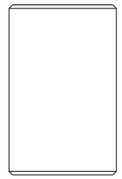
CORDED DRILL



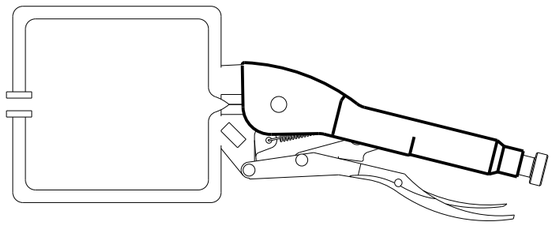
CORDLESS DRILL



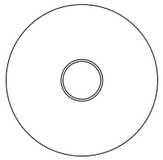
4 FT DIGITAL LEVEL



16MM SOCKET

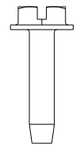


C-CLAMPS

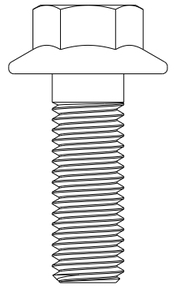


ELECTRICAL TAPE

REQUIRED HARDWARE (PROVIDED)

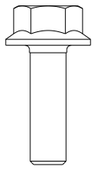


TEK SCR, #10-16 X 0.75, HEX WSHR HEAD, BLK ZN
PN: HC-1530
(HINGE MOUNTING)



BOLT, M12-1.75X35MM, SERR FLNG, DIN 6921 CLASS 8.8
P/N: HC-3829060
(INTERCONNECT BOLT)

TAP SCR, #10-16 X 0.375, PHIL HEX WSHR HEAD
P/N: HC-1186
(BORDER ATTACHMENT)



BOLT, M6X1 - 20MM LENGTH, HEX SERR FL, BLK ZN
PN:HC-3464941
(Z & C - CLIP ANGLE MOUNTING)

REV:	DATE:	DESCRIPTION:	BY:

THIRD ANGLE PROJECTION

PROJECT:	RTN 3000			
TITLE:	RECOMMENDED TOOLS AND HARDWARE; RTN-3000			
DATE: 30-SEP-24	DIM UNITS: INCHES [MILLIMETERS]		SHEET	REV
SCALE: 1/1	DO NOT SCALE DRAWING			00
DESIGN: RBJERKE	JOB NO.	FUNC - TYPE - SIZE	5338167	
DRAWN: RBJERKE	P2121	E - 07 - B		

C Daktronics Warranty & Limitation of Liability

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

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

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

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

1. Warranty Coverage.

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

"Substantial Completion" means the operational availability of the Equipment to the End User in accordance with the Equipment's specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment

B. Daktronics' obligation under this Warranty is limited to, at Daktronics' option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment's specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. This Warranty does not include on-site labor charges to remove or install these components. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by Daktronics.

C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. All such items shall be shipped by End User DDP Daktronics designated facility per Incoterms® 2020. If returned Equipment is repaired or replaced under the terms of this Warranty, Daktronics will prepay ground transportation charges back to End User and shall ship such items DDP End User's designated facility per Incoterms® 2020; otherwise, End User shall pay transportation charges to return the Equipment back to the End User and such Equipment shall be shipped Ex Works Daktronics designated facility per Incoterms® 2020. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. End User shall pay any upgraded or expedited transportation charges

D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend the Warranty Period.

E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. Unless otherwise expressly provided, this Warranty does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Notwithstanding the foregoing, in no event does this Warranty include LED pixel degradation caused by UV light. This Warranty does not provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

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

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

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

A. damage occurring at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, End User assumes all risk of loss or damage, agrees to use any shipping containers that might be provided by Daktronics, and to ship the Equipment in the manner prescribed by Daktronics;

B. damage caused by: (i)the improper handling, installation, adjustment, use, repair, or service of the Equipment, or (ii) any physical damage which includes, but is not limited to, missing, broken, or cracked components resulting from non-electrical causes;

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

C. damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse; (ii) improper power including, without limitation, a failure or sudden surge of electrical power; (iii) improper air conditioning, humidity control, or other environmental conditions outside of the Equipment's technical specifications such as extreme temperatures, corrosives and metallic pollutants; or (iv) any other cause other than ordinary use;

D. damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance, or any other cause beyond Daktronics' reasonable control;

E. failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;

F. statements made about the product by any salesperson, dealer, distributor or agent, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by End User and are not part of the contract of sale;

G. damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics;

H. replenishment of spare parts. In the event the Equipment was purchased with a spare parts package, the parties acknowledge and agree that the spare parts package is designed to exhaust over the life of the Equipment, and as such, the replenishment of the spare parts package is not included in the scope of this Warranty;

I. security or functionality of the End User's network or systems, or anti-virus software updates;

J. performance of preventive maintenance;

K. third-party systems and other ancillary equipment, including without limitation front-end video control systems, audio systems, video processors and players, HVAC equipment, batteries and LCD screens;

L. incorporation of accessories, attachments, software or other devices not furnished by Daktronics; or

M. paint or refinishing the Equipment or furnishing material for this purpose.

3. **Limitation of Liability**

A. Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.

B. It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any claims asserting or based on (a) loss of use of the facility or equipment; lost business, revenues, or profits; loss of goodwill; failure or increased cost of operations; loss, damage or corruption of data; loss resulting from system or service failure, malfunction, incompatibility, or breaches in system security; or (b) any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, injury to property or any damages or sums paid to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise

C. In no event shall Daktronics be liable for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the Purchase Price of the Equipment. The End User's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4. Assignment of Rights

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

5. Governing Law; Election of Remedies

A. The rights and obligations of the parties under this Warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. The parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce each of the parties' rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.

B. Any dispute, controversy or claim arising from or related to this Warranty, the parties shall first attempt to settle through negotiations. In the event that no resolution is reached, then such dispute, controversy, or claim shall be resolved by final and binding arbitration under the Rules of Arbitration of the International Chamber of Commerce. The language of the arbitration

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

6. Availability of Extended Service Agreement

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

Additional Terms applicable to sales outside of the United States

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

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

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

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