RTX-2101/2801 SERIES
DAKT-0204-08

DISPLAY MANUAL

P2028

DD3889505
Rev 02
17 January 2020

201 Daktronics Drive
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800.325.8766

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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.

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Table of Contents

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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 **DD3889505**.

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-3861528**.

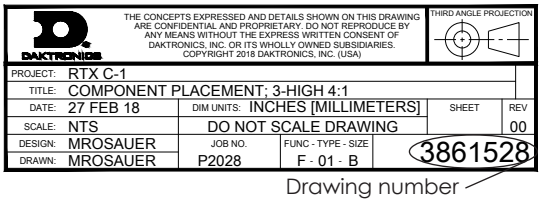

Figure 1: *Drawing Label*

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

> Refer to **DWG-3861528** 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. Refer to these instructions if any display components need replacing or repairing. If an interface board or assembly is not found in the replacement parts list in **Replacement Parts List (p.7)**, use the label to order a replacement. **Figure 2** illustrates a typical label. The part number is in bold.

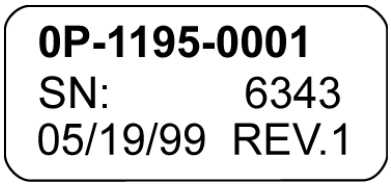

Figure 2: *Typical Label*

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.

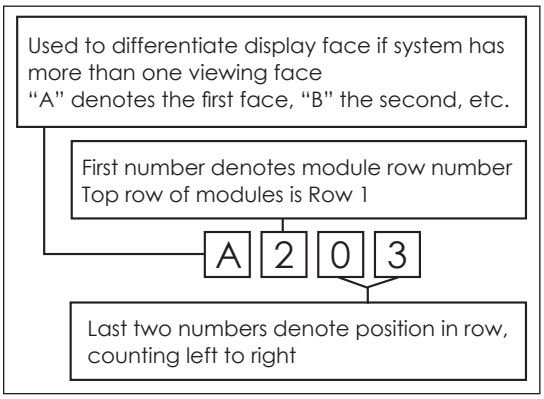

Figure 3: *Module Number Breakdown*

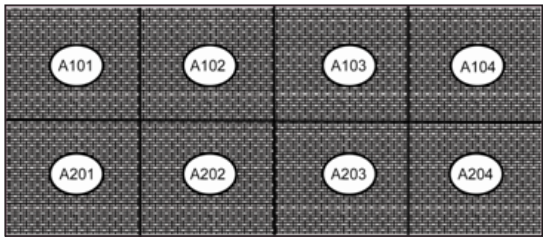

Figure 4: *Module Number*

Model Number

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

RTX-2101-13/15HD-HHHxWWW RTX-2101-16MT-HHHxWWW		
RTX-2101	=	Product series
13/15HD 16MT	=	Pixel pitch/layout
HHH	=	Matrix height
WWW	=	Matrix width

RTX-2801-10/15MN-HHHxWWW		
RTX-2801	=	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.

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

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

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

Part Description	Part Number
Cabinet fan	B-1072
Module	Contract-specific
ProLink Router (PLR)	0P-1525-0004

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:

- **RTX-2101/2801 Series Vertical Mounting Structure Placement & Verification Quick Guide (DD3884678)**
- **RTX-2101/2801 Series Section Crating Quick Guide (DD3926184)**
- **RTX-2101/2801 Series Section Basics Quick Guide (DD3886326)**
- **RTX-2101/2801 Series Section Lifting Quick Guide (DD3884528)**
- **RTX-2101/2801 Series Sectional Installation & Service Quick Guide (DD3889396)**
- **RTX-2101/2801 Series Border Installation Quick Guide (DD3882879)**

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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 RTX-2101/2801 series displays and are listed in numeric order. Any contract-specific drawings take precedence over the general drawings.

Block Diagram; RTX C1, AC/DC/Signal 2-High 4:1 ..... **DWG-3816649**
Block Diagram; RTX C1, Primary/Signal/DC 3-High 4:1 ..... **DWG-3818374**
Block Diagram; RTX C1, AC/Signal, 2-High 8:1 ..... **DWG-3846121**
Block Diagram; RTX C1, DC/Accessory, 2-High 8:1 ..... **DWG-3847034**
Block Diagram; RTX C1, AC/Signal, 3-High 8:1 ..... **DWG-3848363**
Block Diagram; RTX C1, DC/Accessory, 3-High 8:1 ..... **DWG-3850255**
Assembly; 2 Gang Jbox; RTX C1; Domestic **DWG-3859881**
Assembly; 2 Gang Jbox; RTX C1; International **DWG-3859882**
Assembly; PLR 6052 Encapsulated with Mounting, RTX C1 ..... **DWG-3859883**
Assembly; SM to MM Fiber Converter Card @ 1, RTX C1 ..... **DWG-3859884**
Assembly; SM to MM Fiber Converter Card @ 2, RTX C1 ..... **DWG-3859885**
Component Placement; 2-High 8:1 ..... **DWG-3860101**
Component Placement; 2-High 4:1 ..... **DWG-3860822**
Component Placement; 3-High 8:1 ..... **DWG-3861354**
Component Placement; 3-High 4:1 ..... **DWG-3861528**

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C Daktronics Warranty & Limitation of Liability

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

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