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
# Table of Contents

1 Introduction ........................................................................................................................................1
   Important Safety Instructions ...........................................................................................................1
   Specifications Label .........................................................................................................................1
   Resources ..........................................................................................................................................2
   Daktronics Nomenclature ................................................................................................................2
   Display Controllers ........................................................................................................................2
   Product Safety Approval ................................................................................................................3
   Specifications ..................................................................................................................................3

2 Mechanical & Electrical Installation ...............................................................................................4
   Mechanical Installation ......................................................................................................................4
   Electrical Installation .......................................................................................................................4
   Power ................................................................................................................................................4
   Grounding .......................................................................................................................................4
   Signal ..............................................................................................................................................4

3 Troubleshooting ...............................................................................................................................5
   Troubleshooting Table .......................................................................................................................5
   Component Location & Access .........................................................................................................6
   Replacing Digits ...............................................................................................................................6
   LED Drivers ...................................................................................................................................6
   Replacing a Driver .............................................................................................................................7
   Setting the Driver Address ...............................................................................................................7
   Segmentation & Digit Designation ....................................................................................................7
   Schematics ......................................................................................................................................8
   Replacement Parts ............................................................................................................................8

4 Daktronics Exchange and Repair & Return Programs .....................................................................9
   Exchange Program ..........................................................................................................................9
   Repair & Return Program ...............................................................................................................10
   Daktronics Warranty & Limitation of Liability ..............................................................................10

A Reference Drawings ....................................................................................................................11

B Daktronics Warranty & Limitation of Liability ..............................................................................17
This page intentionally left blank.
1 Introduction

This manual explains the installation and maintenance of Daktronics portable LED timer model TI-2002. For additional information regarding safety, installation, operation, or service, refer to the telephone numbers listed in Section 4: Daktronics Exchange and Repair & Return Programs (p.9). This manual is not specific to a particular installation. Project-specific information takes precedence over general information found in this manual.

Important Safety Instructions

- Read and understand all instructions before using the display.
- Do not drop the device or immerse it in water.
- This device shall not be exposed to dripping or splashing, and no objects filled with liquid shall be placed upon it.
- Do not let the power cord touch hot surfaces or hang over the edge of a table, which could damage or cut the cord.
- If an extension cord is necessary, use a three-pronged polarized cord. Arrange the cord with care so that no one will trip over or pull it out.
- Before using an extension cord, inspect the cable thoroughly and verify its compliance with the local electric codes.
- Always turn off and unplug the control equipment when it is not in use.
- Never yank the power cord to pull the plug from the outlet. Grasp the plug and pull to disconnect.
- Disconnect display power before servicing power supplies to avoid electrical shock. Power supplies run on high voltage and may cause physical injury if touched while powered.
- To avoid electrical shock, do not disassemble the control equipment or the driver modules. Incorrect reassembly can cause electric shock and faulty operation or permanent damage to the circuits.

Specifications Label

Power specifications as well as serial and model number information can be found on an ID label on the display, similar to the one shown in Figure 1.

![Figure 1: Specifications Label](image)

Please have the assembly number, model number, and the date manufactured on hand when calling Daktronics customer service to ensure the request is serviced as quickly as possible. Knowing the facility name and/or job number will also be helpful.
Resources

**Figure 2** 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-1007804**. All references to drawing numbers, appendices, figures, or other manuals are presented in bold typeface. Any drawings referenced in a section are listed at the beginning of it as shown below:

**Reference Drawing:**

System Riser Diagram ........................................................................................................... DWG-1007804

Daktronics identifies manuals by the DD or ED number located on the cover page.

Ensure all applicable materials have been gathered before beginning the installation. Contact a Daktronics sales coordinator or project manager.

**Daktronics Nomenclature**

Most display components have a white label that lists the part number (**Figure 3**). Part numbers will also appear on certain drawings. If a component is not found in the **Replacement Parts (p.8)**, use the label to order a replacement. Refer to **Section 4: Daktronics Exchange and Repair & Return Programs (p.9)** if replacing or repairing any display component.

<table>
<thead>
<tr>
<th>Part Type</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual circuit board</td>
<td>0P-XXXX-XXXX</td>
</tr>
<tr>
<td>Assembly; a collection of circuit boards</td>
<td>0A-XXXX-XXXX</td>
</tr>
<tr>
<td>Wire or cable</td>
<td>W-XXXX</td>
</tr>
<tr>
<td>Fuse</td>
<td>F-XXXX</td>
</tr>
<tr>
<td>Transformer</td>
<td>T-XXXX</td>
</tr>
<tr>
<td>Metal part</td>
<td>0M-XXXXXXX</td>
</tr>
<tr>
<td>Fabricated metal assembly</td>
<td>0S-XXXXXX</td>
</tr>
<tr>
<td>Specially ordered part</td>
<td>PR-XXXXX-X</td>
</tr>
</tbody>
</table>

**Accessory Labels**

<table>
<thead>
<tr>
<th>Component</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination block for power or signal cable</td>
<td>TBXX</td>
</tr>
<tr>
<td>Grounding point</td>
<td>EXX</td>
</tr>
<tr>
<td>Power or signal jack</td>
<td>JXX</td>
</tr>
<tr>
<td>Power or signal plug for the opposite jack</td>
<td>PXX</td>
</tr>
</tbody>
</table>

**Display Controllers**

Daktronics TI-2002 timing displays are designed for use with an All Sport® 1600 or 5000 console. Both controllers use keyboard overlays (sport inserts) to control numerous sports and display models. Refer to the following manuals for operating instructions:

- **All Sport 1600 Series Control Console Operation Manual (ED-12462)**
- **All Sport 5000 Series Control Console Operation Manual (ED-11976)**

These manuals are provided on a CD with the control console and they are also available online at [www.daktronics.com/manuals](http://www.daktronics.com/manuals).
Product Safety Approval

Daktronics portable LED timers are ETL-listed and tested to CSA standards for indoor use. Contact Daktronics with any questions regarding the testing procedures.

Specifications

TI-2002 displays require a 120-240 VAC, 15 Amp circuit.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions: Height, Width, Depth</th>
<th>Weight</th>
<th>Power (120/240 V)</th>
<th>Driver # &amp; Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>TI-2002</td>
<td>9” H x 1’-8” W x 4” D (229 mm, 508 mm, 102 mm)</td>
<td>10 lb (4.5 kg)</td>
<td>40 Watts, 1 Amp</td>
<td>A1 97</td>
</tr>
</tbody>
</table>
2 Mechanical & Electrical Installation

Mechanical Installation

Daktronics portable TI-2002 timers may simply be placed on a table, counter, or floor. The TI-2002 also has a handle for easy transport as well as two keyholes on the rear of the display for hanging on a wall.

Due to the variety of wall materials used in sports facilities, Daktronics cannot anticipate every user’s individual installation needs or provide mounting hardware suitable for every installation. Choose a method of installation that will safely support the display’s weight.

**Note:** Do not use the carrying handle to permanently suspend the display.

Electrical Installation

**CAUTION:** Only qualified individuals should access the electrical components of the display and its associated equipment. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes.

Daktronics engineering staff must approve all changes or the warranty will be void.

**Power**

The display features a 120 VAC power cord with a three-prong plug. Install a grounded receptacle near the equipment so that the power cord can easily reach it. The control console also requires a 120 VAC receptacle. Like the display, the Daktronics controllers use less than 1 Amp of power.

Displays operating on 240 VAC are also available, and they are shipped with a universal power plug.

**Grounding**

All components of a display system – including but not limited to displays, control equipment, and connected peripheral equipment – must be electrically grounded. Only qualified individuals may perform electrical work, including verification of ground resistance. Daktronics is not responsible for improper grounding or damage incurred as a result of improper grounding.

Grounding methods must meet the provisions of all applicable local and national codes. Inspect and verify all grounding methods meet the provisions of all applicable local and national codes.

Proper grounding is necessary for reliable equipment operation and general electrical safety. Failure to properly ground the display system may void the warranty, disrupt operation, damage equipment, and cause bodily harm or death.

**Signal**

Signal installation requires routing paired, shielded cable, 22 AWG minimum, between the display location and the control location. Daktronics offers various lengths of control cable; refer to *Replacement Parts (p.8).*

1. Insert one end of the signal cable into the 1/4” phone **J31 SIGNAL IN** jack located on the right side of the display.

2. Connect the other end of the signal cable into the 1/4” phone **J1, J2,** or **J3** jack on the All Sport 5000 console (or **J1/J2** on the All Sport 1600 console).
3 Troubleshooting

Disconnect power before doing any repair or maintenance work on the display. Permit only qualified service personnel to access internal display electronics. Disconnect power when not using the display.

Troubleshooting Table

This section lists potential problems with the system, indicates possible causes, and suggests corrective action. This list does not include every possible problem, but it does represent some of the more common situations that may occur.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution/Items to Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display does not light, and console does not work</td>
<td>No power to the display</td>
<td>Check that the main circuit breaker for the display is on.</td>
</tr>
<tr>
<td></td>
<td>No power to the control console</td>
<td>Check that the display is receiving 120-40 VAC power.</td>
</tr>
<tr>
<td>Display digits do not light, but console works</td>
<td>No wired signal from control console</td>
<td>Check that the display is receiving 120-240 VAC power.</td>
</tr>
<tr>
<td></td>
<td>No signal to driver</td>
<td>Check that the red DS1 LED on the driver lights up when sending commands from the controller; see LED Drivers (p.6).</td>
</tr>
<tr>
<td></td>
<td>No power to driver</td>
<td>Check that the red DS1 LED on the driver lights up when sending commands from the controller. See LED Drivers (p.6).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exchange the driver with a working one of the same part #. Replace if necessary. See LED Drivers (p.6).</td>
</tr>
<tr>
<td>Display digits light, but not in the correct order</td>
<td>Incorrect sport code</td>
<td>Ensure the correct sport code is being used for the display model. Refer to the appropriate console operation manual.</td>
</tr>
<tr>
<td></td>
<td>Incorrect driver address</td>
<td>Ensure all drivers are set to the correct address. See Setting the Driver Address (p.7).</td>
</tr>
<tr>
<td>Digits light, console works, but nothing displays</td>
<td>No wired signal from control console</td>
<td>(see solution above)</td>
</tr>
<tr>
<td></td>
<td>Bad/damaged field wiring</td>
<td>Check that the red DS1 LED on the driver lights up when sending commands from the controller. See LED Drivers (p.6).</td>
</tr>
<tr>
<td>Display works, but some LEDs always stay on</td>
<td>Short in digit circuit</td>
<td>Exchange the digit with a working one of the same part # to verify the problem. Replace if necessary. See Replacing Digits (p.6).</td>
</tr>
</tbody>
</table>
### Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution/Items to Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display works, but some LEDs do not light or they blink</td>
<td>Bad connection</td>
<td>Verify the connector on the back of the digit circuit board is secure.</td>
</tr>
<tr>
<td>Display works, but some digits do not light</td>
<td>Bad digit or driver</td>
<td>Exchange the digit or driver with a working one of the same part # to verify the problem. Replace if necessary. See Replacing Digits (p.6) or LED Drivers (p.6).</td>
</tr>
<tr>
<td>Display works, but some digits do not light</td>
<td>Incorrect sport code</td>
<td>(see solution on previous page)</td>
</tr>
<tr>
<td>Display works, but some digits do not light</td>
<td>Incorrect driver address</td>
<td>(see solution on previous page)</td>
</tr>
</tbody>
</table>

### Component Location & Access

**Reference Drawings:**

- Mechanical/Electrical Specs- TI-2002 .............................................................. DWG-138314

To access the driver, digits, or other internal components, use a screwdriver to loosen the two screws on the front of the display, and remove the front panel. Refer to DWG-138314 in Appendix A for component locations.

### Replacing Digits

LEDs are embedded in a printed circuit board (PCB) that is mounted to the back of the timer’s face panel. Do not attempt to remove individual LEDs. In the case of a malfunctioning LED or digit segment, replace the entire digit circuit board.

To replace a digit:

1. Open the front access panel as described in Component Location & Access (p.6).
2. Disconnect the plug from the back of the digit by squeezing together the locking tabs and pulling the connector free.
3. Remove the nuts securing the digit to the inside of the panel, and then lift the digit off the studs.
4. Position a new digit over the studs. Make sure the small plastic spacers are still in place, and then tighten the nuts.
5. Reconnect the plug to the back of the digit. This is a keyed connector and will attach in one way only. Do not force the connection.
6. Close and secure the access panel, then power up and test the display to verify the issue has been resolved.

### LED Drivers

**Reference Drawings:**

- 4 Column LED Driver II; Specifications .............................................................. DWG-123783

The LED driver performs the task of switching digits on and off within the display. For detailed descriptions and pin-outs of the driver jacks, refer to DWG-123783 in Appendix A.

When troubleshooting driver problems, two LEDs labeled DS1 and DS2 provide the following diagnostic information:
Troubleshooting

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Function</th>
<th>Operation</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1</td>
<td>Red</td>
<td>Signal RX</td>
<td>Steady on or blinking</td>
<td>DS1 will be on or blinking when the driver is receiving a signal and off when there is no signal.</td>
</tr>
<tr>
<td>DS2</td>
<td>Green</td>
<td>Power</td>
<td>Steady On</td>
<td>DS2 will be on and steady to indicate the driver has power.</td>
</tr>
</tbody>
</table>

**Note:** While it is necessary to have the display powered on to check the LED status indicators, always disconnect power before servicing.

### Replacing a Driver

If the driver status indicators do not appear to be working correctly, it may be necessary to replace the driver.

1. Open the front access panel as described in **Component Location & Access (p.6)**.
2. Disconnect all plugs from the driver by squeezing together the locking tabs and pulling the connectors free. It may be helpful to label the cables or take a picture to know which cable goes to which connector when attaching the new driver.
3. Remove the nuts securing the driver to the inside of the enclosure.
4. Carefully lift the driver from the display and place it on a clean, flat surface.
5. Position a new driver over the studs and tighten the nuts.
6. Reconnect all plugs to their mating jacks on the driver. These are keyed connectors and will attach in one way only. Do not force the connections.
7. Ensure the new driver is set to the correct address. This will be the same address of the old driver being replaced. Refer to **Setting the Driver Address (p.7)**.
8. Close and secure the front access panel, then power up and test the display to verify the issue has been resolved.

### Setting the Driver Address

Since the same LED drivers can be used for many display models, each driver must be set to receive the correct signal input, or address, for the model being used.

The TI-2002 uses **Address 97**. This address is set with jumper wires in a 12-pin plug which mates with jack J19 on the driver (Figure 4). It may be possible to reuse the same address plug from the driver that was replaced. If not, order a fully-loaded address plug (Daktronics part # 0A-1150-0064) and set it to **Address 97** by cutting the following pins: 3 (red), 5 (orange), 6 (tan), 8 (pink), and 12 (black).

### Segmentation & Digit Designation

**Reference Drawings:**

- Segmentation, 7 Segment Bar Digit ....................................................... DWG-38532

In each digit, certain LEDs always go on and off together. These groupings of LEDs are referred to as segments. DWG-38532 in **Appendix A** details which connector pin is wired to each digit segment and the wiring color code used throughout the display.

The mechanical/electrical spec drawing in **Appendix A** specifies the driver connectors controlling the digits. Numbers shown in hexagons in the upper half of each digit indicate which connector is wired to that digit.

---

Troubleshooting
Schematics

Reference Drawings:
Schematic; LED Driver II Plate w/XMFR; 4-Column ................................. DWG-157795

For advanced display troubleshooting and repair, it may be necessary to consult the schematic drawings. DWG-157795 in Appendix A shows detailed power and signal wiring diagrams of internal display components.

Replacement Parts

The following table contains display components that may require replacement. Many of the other display components will have attached part number labels.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Column LED Driver II, coated</td>
<td>0P-1150-0131</td>
</tr>
<tr>
<td>5&quot; LED Digit, Amber</td>
<td>0P-1150-0081</td>
</tr>
<tr>
<td>5&quot; LED Digit, Red</td>
<td>0P-1150-0200</td>
</tr>
<tr>
<td>Transformer; 115/230V, 2A</td>
<td>T-1063</td>
</tr>
<tr>
<td>Signal cable, 1/4&quot; phone, 20'</td>
<td>W-1236</td>
</tr>
<tr>
<td>Signal cable, 1/4&quot; phone, 50'</td>
<td>W-1237</td>
</tr>
<tr>
<td>Signal cable, 1/4&quot; phone, 10'</td>
<td>W-1340</td>
</tr>
<tr>
<td>Signal cable, 1/4&quot; phone, 100'</td>
<td>W-1381</td>
</tr>
</tbody>
</table>

Refer to Section 4: Daktronics Exchange and Repair & Return Programs (p.9) for information on exchanging or returning parts.
4 Daktronics Exchange and Repair & Return Programs

Exchange Program
The Daktronics Exchange Program is a service for quickly replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before contacting Daktronics, identify these important numbers:

Display Serial Number: ________________________________________________________________

Display Model Number: _______________________________________________________________

Job/Contract Number: _______________________________________________________________

Date Manufactured/Installed: _________________________________________________________

Daktronics Customer ID Number: ______________________________________________________

To participate in the Exchange Program, follow these steps:


<table>
<thead>
<tr>
<th>Market Description</th>
<th>Customer Service Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools (including community/junior colleges), religious organizations, municipal clubs, and community centers</td>
<td>877-605-1115 Fax: 605-697-4444</td>
</tr>
<tr>
<td>Universities and professional sporting events, live events for auditoriums, and arenas</td>
<td>866-343-6018 Fax: 605-697-4444</td>
</tr>
</tbody>
</table>

2. When the new exchange part is received, mail the old part to Daktronics.
   If the replacement part fixes the problem, send in the problem part being replaced.
   a. Package the old part in the same shipping materials in which the replacement part arrived.
   b. Fill out and attach the enclosed UPS shipping document.
   c. Ship the part to Daktronics.

3. The defective or unused parts must be returned to Daktronics within 5 weeks of initial order shipment.
   If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part. Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.
Repair & Return Program
For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service.**
   Refer to the appropriate number in the chart on the previous page.

2. **Receive a case number before shipping.**
   This expedites repair of the part.

3. **Package and pad the item carefully to prevent damage during shipment.**
   Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend using packing peanuts when shipping.

4. **Enclose:**
   - name
   - address
   - phone number
   - the case number
   - a clear description of symptoms

5. **Ship to:**
   Daktronics Customer Service
   [Case #]
   201 Daktronics Drive, Dock E
   Brookings, SD 57006

Daktronics Warranty & Limitation of Liability
The Daktronics Warranty & Limitation of Liability is located at the end of this manual. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.
A Reference Drawings

Refer to Resources (p.2) for information regarding how to read the drawing number. Any contract-specific drawings take precedence over the general drawings.

Reference Drawings:
- Segmentation, 7 Segment Bar Digit ................................................................. DWG-38532
- 4 Column LED Driver II; Specifications ......................................................... DWG-123783
- Mechanical/Electrical Specs- TI-2002 ............................................................. DWG-138314
- Schematic; LED Driver II Plate w/XMFR; 4-Column ...................................... DWG-157795
7 SEGMENT BAR DIGIT
FRONT VIEW

CONNECTOR PIN NUMBERING
NOTE SPLINE NEAR NO. 1

COLOR CODE

<table>
<thead>
<tr>
<th>PIN NO.</th>
<th>WIRE COLOR</th>
<th>DRIVER SEGMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ORN</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>RED</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>BRN</td>
<td>A</td>
</tr>
<tr>
<td>4</td>
<td>BLU</td>
<td>F</td>
</tr>
<tr>
<td>5</td>
<td>PNK</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>TAN</td>
<td>D</td>
</tr>
<tr>
<td>7</td>
<td>BLK</td>
<td>COM.</td>
</tr>
<tr>
<td>8</td>
<td>GRY</td>
<td>H</td>
</tr>
<tr>
<td>9</td>
<td>VIO</td>
<td>G</td>
</tr>
</tbody>
</table>

NOTE: "H" SEGMENT, GRAY WIRE IS NOT USED ON 7 SEGMENT BAR DIGIT.
NOTE

- With no address pins selected the driver will default to A/S 4000 protocol
- Column select pins work for either A/S 4000 or A/S 5000 protocol
- Driver will default to columns 5–8
- Green LED indicates the driver has power
- Red LED will be on or blinking when the driver is receiving signal
- Redrive circuit is processor refreshed (refer to Dwg A-128429 for further information on the current loop Redrive circuit specifications)

Also, column select #1 makes these changes:
input data digit 5, segment H
is sent to digit output no. 1, segment H.
input data digit 9, segment H
is sent to digit output no. 2, segment H.
TO GAIN ACCESS TO THE INTERIOR COMPONENTS, REMOVE THE TWO SCREWS SECURING THE FACE PANEL.

FRONT VIEW

SIDE VIEW

NOTE: THE NUMBER LISTED BY EACH DIGIT INDICATES THE DIGIT DESIGNATION IN RELATION TO THE LED DRIVER.

NOTE: REFER TO SYSTEM RISER DIAGRAM FOR ADDITIONAL WIRING DIAGRAMS OF DISPLAY. USE A MINIMUM OF 24AWG, SHIELDED, TWO CONDUCTOR CABLE FOR SIGNAL TERMINATION.

POWER SPEC:
- 120V AC, 15 AMP CIRCUITREQ.
- 40 WATTS MAXIMUM.
- PRODUCT SAFETY APPROVAL: ETL LISTED, TESTED TO CSA STANDARDS, AND CE LABELED FOR INDOOR USE.

REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP-1150-0131</td>
<td>DIGIT DRIVER</td>
</tr>
<tr>
<td>OP-1150-0200</td>
<td>DIGIT; 5&quot; RED 7-SEG LED</td>
</tr>
<tr>
<td>OP-1150-0081</td>
<td>DIGIT; 5&quot; AMBER 7-SEG LED</td>
</tr>
<tr>
<td>T-1063</td>
<td>TRANSFORMER, 16V SEC.</td>
</tr>
</tbody>
</table>

DISPLAY SPEC:
- SHIPPING WEIGHT: 15 LBS
- MOUNTING WEIGHT: 10 LBS
- DIMENSIONS: 20.00" X 9.00" X 4.00"

REAR VIEW (WITH FACE PANEL REMOVED)
120V AND 230VAC MODELS

P43 and wires to P6 and horn are not used on some drivers.

NOTE: FOR SWIM SYSTEMS CONTROLLED BY POWER TIME

J31 SIGNAL IN
- RED
- BLK

J32 SIGNAL OUT
- RED
- BLK

(RA-1550-0443)

SOME MODELS DO NOT HAVE SIGNAL OUT CONNECTION

120V AC MODELS

P41 120V AC
- WHT
- BLK

J41 120V AC

12-PIN ADDRESS PLUG. JUMPER WIRES IN P19 SET THE ADDRESS PER MODEL SPECS.

16V AC SECONDARY

*DRIVER ASSEMBLY NO. MAY VARY

LED DRIVER/TRANSFORMER/TRAY ASSEMBLY
NUMBERS IN PARENTHESES ARE DAKTRONICS PART NUMBERS
NOTE: POWER FOR OPTIONAL TNMC CONNECTS TO J43

230V AC MODELS

P41 230V AC
- BLK

J42

J44

1
2
3
4
5

1152-R01A-157795
B Daktronics Warranty & Limitation of Liability

This section includes the Daktronics Warranty & Limitation of Liability statement (SL-02374).
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. 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; 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. 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;
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
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.

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