

PC-2002
PACE CLOCK SYSTEM
DISPLAY MANUAL
P1153

ED-14253
Rev 06
31 August 2021

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.

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DAKTRONICS

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1 Introduction

This manual explains the installation and maintenance of Daktronics PC-2002 pace clock display. For additional information regarding safety, installation, operation, or service, refer to the telephone numbers listed in **Section 6: Daktronics Exchange and Repair & Return Programs (p.14)**. 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.
- 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.

WARNING! To prevent injury, the display must be securely attached to a wall in accordance with installation instructions.

Specifications Label

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

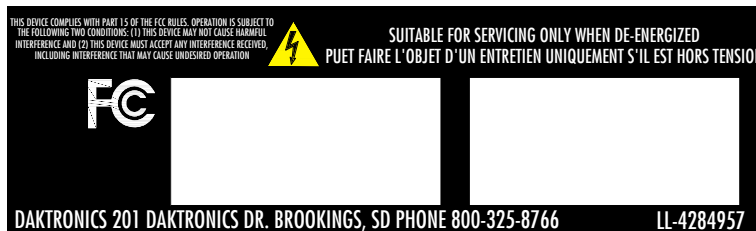



Figure 1: Specifications Label

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:

 DAKTRONICS, INC. BROOKINGS, SD 57006		<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.</small>
DD NOT SCALE DRAWING		
PROJ: DAKTRONICS		
TITLE: SYSTEM RISER DIAGRAM		
DESIGN:	DRAWN: APAGE	DATE: 11 MAY 10
SCALE: NONE		
SHEET	REV	JOB NO:
200	02	C17581
FUNC-TYPE-SIZE		
F-01-D		1007804

Drawing Number

Figure 2: Drawing Label

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.13)**, use the label to order a replacement. Refer to **Section 6: Daktronics Exchange and Repair & Return Programs (p.14)** if replacing or repairing any display component.

0P-1127-0024
SN: 2465
02/19/12 Rev. 1

Figure 3: Part Label

Main Component Labels	
Part Type	Part Number
Individual circuit board	0P-XXXX-XXXX
Assembly; a collection of circuit boards	0A-XXXX-XXXX
Wire or cable	W-XXXX
Fuse	F-XXXX
Transformer	T-XXXX
Metal part	0M-XXXXXXX
Fabricated metal assembly	0S-XXXXXX
Specially ordered part	PR-XXXXX-X

Accessory Labels	
Component	Label
Termination block for power or signal cable	TBXX
Grounding point	EXX
Power or signal jack	JXX
Power or signal plug for the opposite jack	PXX

Product Safety Approval

The PC-2002 is ETL-listed, tested to CSA standards and CE-labeled for indoor use only. Contact Daktronics with any questions regarding the testing procedures.

2 Mechanical Installation

This section describes the mounting details of the PC-2002. Daktronics is not responsible for mounting the display. The customer is responsible for providing mounting anchors/screws. A qualified engineer must specify the mounting anchor type according to national and local building codes.

Note: Daktronics assumes no liability for any installation derived from the information provided in this manual or installations designed and installed by others.

The PC-2002 can mount directly to the wall surface using top and bottom mounting brackets. These brackets then attach to the wall with four anchors. Refer to **Figure 4**.

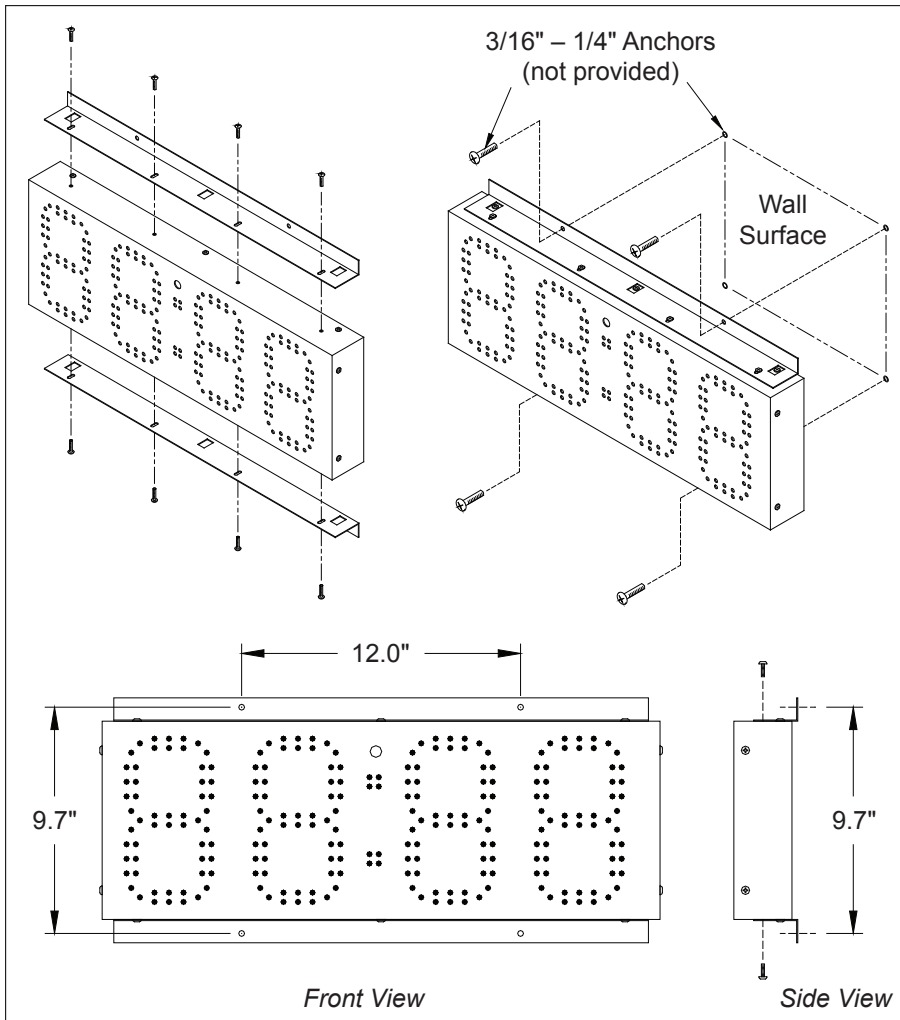


Figure 4: Surface Mounting Installation

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

Attach the brackets to the top and bottom of the display. Level the display against the mounting surface and make a mark through the anchor holes on the bracket with a marker or heavy pencil. Drill holes in the wall and install anchors at the marked locations. Minimum steel anchor size is 3/16" diameter (4.7 mm).

3 Electrical Installation

Power

The PC-2002 receives external power through a standard 3-prong power cord plugged into a 120 or 240 VAC outlet (refer to specifications label, **Figure 1**, for power requirements). The outlet shall be installed near the display and easily accessible.

Figure 5 illustrates the dimensions for placing the power receptacle to line up with the openings in the rear of the display.

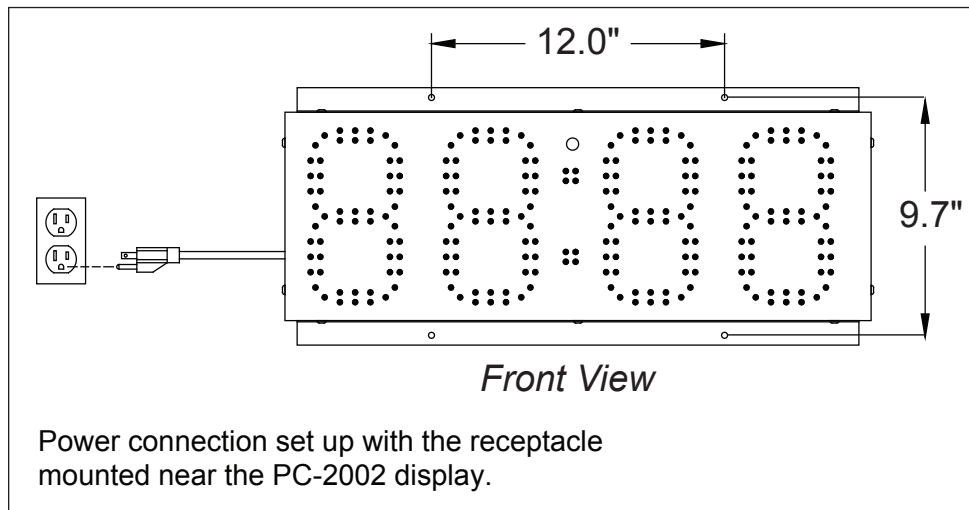


Figure 5: Electrical Installation

Note: PC-2002 displays feature an internal time delay 1/2 amp, 250 V fuse for 120 VAC models or 1/4 amp 250 V fuse for 240 VAC models. In the unlikely event the fuse needs to be replaced, contact Daktronics Customer Service.

Wired Signal Connection

The PC-2002 is designed to work with the JC-100 handheld control console, using 22 AWG two-pair cable (Daktronics part # W-1234). It is also possible to connect signal in from Daktronics All Sport® scoring consoles and OmniSport® 2000 timing consoles, and signal out to multiple displays, using 18 AWG shielded cable (part # W-1117).

Refer to **DWG-191740** for detailed signal connection information.

Wireless Signal Connection

The PC-2002 is capable of being controlled via wireless signal. The wireless radio system requires a Daktronics All Sport® scoring console or OmniSport® 2000 timing console equipped with radio transmitter as well as a radio receiver mounted inside the display.

The optional radio receiver is installed on the right side of the display cabinet (as viewed from the front).

1. Power off the display.
2. Turn the display around so that you are looking at the rear.
3. Using a Phillips screwdriver, remove the 10 outer screws to separate the front and rear panels of the display.
4. CAREFULLY lay the rear panel flat to expose the internal components.
5. Disconnect the 5-pin connector from the **J2 RADIO JACK** on the left side of the driver printed circuit board (PCB).

Note: With a radio receiver installed, it will not be possible to use the **SIGNAL IN** or **SIGNAL OUT** terminal blocks.

6. Connect the 6-pin power/signal cable from the radio receiver unit (**A**) into the mating 6-pin radio adapter cable (**B**). Refer to **Figure 6**.

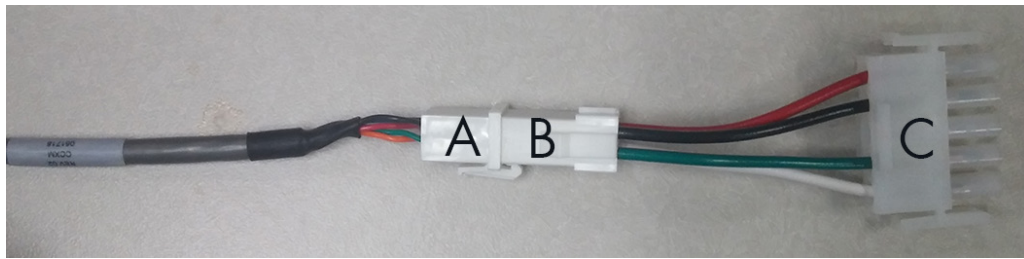


Figure 6: Radio Power/Signal Cable and Adapter

7. Connect the 5-pin end of the radio adapter cable (**C**) into the **J2 RADIO JACK**. Refer to **Figure 7**.

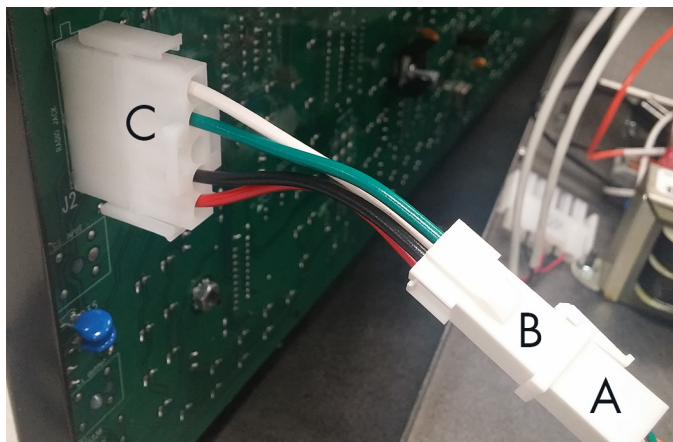


Figure 7: Radio Connection

8. Remove the plastic strips from the adhesive-backed hook-and-loop fasteners on the back of the radio receiver unit, and stick the unit to the inside left side of the rear panel.

9. Route the brass antenna connector through the "D" hole in the side of the display cabinet. Slip on the washer and nut on the outside of the display, and then tighten the nut using a 5/16 wrench. Screw the black antenna onto the brass connector. Ensure the antenna is pointed straight up. Refer to **Figure 8**.



Figure 8: Radio Receiver Installed

10. CAREFULLY close the front and rear panels. Ensure that no wires are pinched between the metal panels. It may be necessary to disconnect the 6-pin power/signal cable from the radio receiver unit and coil it up to fit inside the display.
11. Reinsert/tighten the 10 Phillips screws.
12. During operation, ensure the radio antenna stays pointed straight up.

For more information about the wireless radio control option, refer to the **Gen VI Radio Installation Manual (DD2362277)**, provided with the receiver unit and available online at www.daktronics.com/manuals.

Radio Settings

With a radio receiver installed in the display, watch for the radio Broadcast settings ("b1") and Channel settings ("C1") during the Power-On Self Test (POST).

These values must match the settings in the control console:

```
RADIO SETTINGS
BCAST 1  CHAN 01
```

If the radio receiver channel and broadcast settings match those set in the console but the console does not control the display, there may be radio interference. This can occur when a nearby display also uses radio control. In this case, change the settings of the wireless radio receiver inside the display and in the console as described in the radio control manuals.

4 Controls and Timing Functions

Program Operations

1. **Workout Program or "Pace Clock"**. This program is used to structure workouts and practices. The operator has the option to configure a pace time from 00:00 to 99:59. If the time is configured to 0:00, the display will count up to 59:59 (mn:sc), roll over to 0:00, and repeat the cycle. If the time is configured from 0:01 to 99:59, the display will count up to that time, sound the horn, roll over to 0:00 and repeat the cycle.
2. **Count Up or Breakout Timer**. This program counts up to the configured time and sounds the horn. The time can be configured from 00:00 to 99:59. If the time is set to 0:00, the display will count up to 59:59 (mn:sc), roll over to 0:00, and continue counting.

While the display is counting, a start input will show the split time (time since last start input) for 10 seconds and then go back to the running time. Pressing **<RESET>** resets the timer to 0.00. Pressing **<RESET>** again will return the display to its previous state.

3. **Game Clock**. This program counts down to zero from a configured time and sounds the horn. The operator can configure the time from 00:00 to 99:59 (mn:sc). If the time is set to 0:00, the display will count down to 0:00, roll over to 59:59, and continue counting down. Pressing **<RESET>** resets the timer to the configured time.
4. **Shot Clock**. In this program, the display shows the tens and ones of seconds on the two center digits. The display counts down to 0:00 from a configured time and sounds the horn. The operator can configure the time from 0 to 99 seconds. In this mode, a **START** will start the display counting; a **STOP** will stop the display from counting. This mode automatically configures the PC-2002 to receive the signal from an All Sport console or an OmniSport timer for use as a shot clock display (such as for water polo).
5. **12-Hour Time of Day**. This program displays the time of day in 12-hour format.
6. **24-Hour Time of Day**. This program displays the time of day in 24-hour format.
7. **Slave mode (receive only)**. In this mode, the display will only show information received via signal from an All Sport or OmniSport control console. If no signal is present the display will be blank.

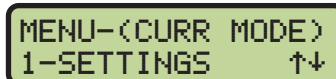
JC-100 Console Operation

Connect the 4-pin power/signal cable from the JC-100 Judges Console to a J-box, and from the J-box to the PC-2002 as shown in **DWG-191740**. The keypad insert number needed for operation is LL-2584 (**DWG-191855**).

When the PC-2002 is turned on and the JC-100 is connected, press **<MENU>** on the control console to view the available options. Use the up and down arrows to scroll through these options, or press the number located next to the option.

Press **<ENTER>** when the desired action is on the screen.

Press the **<MENU>** button at any time to exit.



```
MENU-(CURR MODE)
1-SETTINGS  ↑↓
```

The settings will need to be changed to fit the operator's specific needs, but once the program has the desired settings, the console will remember those settings for next use. The available settings and menu numbers will vary by the current mode.

Time

The Time setting lets operators enter desired timing options for the mode. To change the preset time, press **<MENU>**, and then press **<ENTER>**. Press **<ENTER>**, input the desired time using the keypad, and then press **<ENTER>** once more.

```
MENU-SETTINGS
1-TIME      ↑↓
```

```
ENTER TIME
00:00 *
```

Note: For 12 Hour Time of Day (mode 5), select whether the time is AM or PM using the arrow keys.

Intensity

The Intensity setting lets operators manipulate the brightness of the LED digits. The settings for intensity range from 1 to 16, with 16 being the brightest (default). To change the display's intensity, press **<MENU>**, and then press **<ENTER>**. Scroll down to *2-INTENSITY* and press **<ENTER>**. Use the up and down arrows or the keypad to adjust the intensity. When finished, press **<ENTER>**.

```
MENU-SETTINGS
2-INTENSITY ↑↓
```

```
INTENSITY(1-16)
=16 *
```

Horn

The Horn setting lets operators switch between an automatic horn and a manual horn. To change the Horn settings, press **<MENU>**, and then press **<ENTER>**. Scroll down to *3-HORN* and press **<ENTER>**. Press **<ENTER>** again to allow the selection of the Horn option. Use the up and down arrows to select between the *AUTO* (default) and *MANUAL*, and then press **<ENTER>**.

```
MENU-SETTINGS
3-HORN      ↑↓
```

```
HORN CONFIG
(AUTO)*
```

After selecting the desired settings, refer to the sections below for operation instructions of specific modes.

Mode #1: Workout

To select a mode, press **<MENU>** and go to the *2-CHANGE MODE* option. Use the arrow keys or press the number keys to select a particular mode, and then press **<ENTER>**.

```
MENU-(CURR MODE)
2-CHANGE MODE ↑↓
```

To edit a workout, press **<MENU>** followed by **<ENTER>** on the *1-EDIT WORKOUT* option. Select the step number to change or add and press **<ENTER>**. To select the step type, scroll up or down through the options and press **<ENTER>** on the desired step type. There are six different step options to work with:

```
MENU-CHANGE MODE
1-WORKOUT   ↑↓
```

```
MENU-WORKOUT
1-EDIT WORKOUT
```

- *STOP* – This step allows operators to enter where to end or “Stop” a workout.
- *BEG CIRCUIT* – This step allows operators to enter a set of steps to repeat a set number of times within a workout. Basically, this is a workout within the whole workout.

```
EDIT STEP   1*
PACE 00:00
```

After pressing **<ENTER>** to select this step, the operator is prompted to enter the number of times this circuit is to be repeated. Adding different steps within this circuit is the same as adding steps to the whole workout. The operator will be prompted to enter the amount of times each step within the circuit is to be repeated as they are added.

- *END CIRCUIT* – This step will end the circuit that was entered within the *BEG CIRCUIT* option. After ending a circuit, additional steps may still be added to the rest of the total workout.

- *SWIM* – This step allows operators to enter the amount of time to have the swimmer(s) swim within one step.
- *REST* – This step allows operators to enter the amount of time to have the swimmer(s) rest within one step.
- *PACE* – This step allows operators to enter a pace step that will override the rest of the workout (or circuit if a pace step is entered within one) and continue to count up to the entered time, return to 0:00 and start counting again. It will repeat this step indefinitely.

To insert a step, press **<MENU>**, scroll down to 2-INSERT STEP, and then press **<ENTER>**. Select the step number to insert after using the arrow keys or number pad, and then press **<ENTER>** to insert a new step into the workout.

```
MENU-WORKOUT
2-INSERT STEP ↑↓
```

```
INSERT @STEP 3*
STOP
```

To delete a step, press **<MENU>**, scroll down to 3-DELETE STEP, and then press **<ENTER>**. Select the step number to delete using the arrow keys or number pad, and then press **<ENTER>** to remove the step from the workout.

```
MENU-WORKOUT
3-DELETE STEP
```

```
DELETE STEP 3*
STOP
```

To clear the entire workout, press **<MENU>** and scroll down to 4-CLEAR WORKOUT and then press **<ENTER>**. On the screen that appears, press **<ENTER>** to confirm the whole workout is to be cleared.

```
MENU-WORKOUT
4-CLEAR WORKOUT
```

```
CLEAR WORKOUT?
PRESS ENTER
```

After entering all options, press **<START>** to begin the workout.

Horn

The workout mode has a few different horn options than other modes. To access the horn settings, press **<MENU>**, scroll down to 5-SETTINGS, and then press **<ENTER>**. Scroll down to 2-HORN and press **<ENTER>** once more. Here the operator can individually select the horn settings for swim steps and rest steps. Scroll to the desired step setting and press **<ENTER>**. Select a horn mode (3 for swim, 2 for rest), and then press **<ENTER>** to save the horn setting.

```
MENU-WORKOUT
5-SETTINGS ↑↓
```

```
MENU-SETTINGS
2-HORN ↑↓
```

```
MENU-HORN
1-SWIM (OFF) ↑↓
```

Mode #2: Breakout

Press the **<START>** key to start the clock counting up.

```
MENU-CHANGE MODE
2-BREAKOUT ↑↓
```

Pressing the **<START>** key again will display an individual lap time and will allow the total time to continue running. The laps will be numbered up to 99 and then start over at 1.

```
PRESET= 00:00
0.0
```

Pressing the **<STOP>** key stops the clock and shows the lap time. After pressing the **<START>** key again, the clock will resume counting up from the stopped time. These procedures can be followed as many times as allowed before the preset time is reached. If there is no preset time, the procedure may be used as many times as desired. Press the **<RESET>** key to start the program over.

Mode #3: Game Clock

Press the <START> key to start the clock counting down from the preset time. Press the <STOP> key to stop the clock. Press the <START> key to resume the countdown. This procedure may be repeated until the clock reaches 0.00. Press <RESET/CLEAR> to return the game clock to the original preset time.

```
MENU-CHANGE MODE
3-GAME CLOCK ↑↓
```

```
GAME CLOCK 15:00
HORN=AUTO
```

Mode #4: Shot Clock

Press the <START> key to start the countdown from the preset shot clock time. While the clock is running, press the <RESET> key to start the clock over again at the preset time and automatically start counting down. Press the <STOP> key to pause the countdown. When the clock is stopped, pressing <RESET> will place the clock at the preset time; however, <START> must then be pressed to resume the countdown as it will not begin automatically.

```
MENU-CHANGE MODE
4-SHOT CLOCK ↑↓
```

```
SHOT CLOCK 35
HORN=AUTO
```

Mode #5: 12 Hour Time of Day

To change the time of day, press <MENU>, and then press <ENTER>. Press <ENTER>, input the desired time using the keypad, and then press <ENTER> once more. Select whether the time is AM or PM using the arrow keys, and then press <ENTER> to save the time of day settings.

```
MENU-CHANGE MODE
5-12HR T.O.D. ↑↓
```

```
12HR TIME OF DAY
12:00AM
```

Mode #6: 24 Hour Time of Day

To change the time of day, press <MENU>, and then press <ENTER>. Press <ENTER>, input the desired time using the keypad, and then press <ENTER> once more.

```
MENU-CHANGE MODE
6-24HR T.O.D. ↑↓
```

```
24HR TIME OF DAY
13:00
```

Team Manager

The Daktronics PC-2002 can interface with third-party Hy-Tek™ TEAM MANAGER with WORKOUT MANAGER software for easy entry of workouts from a computer to the display. The TEAM MANAGER must have the Workout Manager Basic option configured. After creating a workout in the Hy-Tek software:

1. Turn on the PC-2002, connect the JC-100 console, and set to mode 1-WORKOUT.
2. The interface cable (Daktronics part # 0A-1153-0036) has a 9-pin serial connector on one end and a stereo phone jack connector on the other end. Connect the 9-pin plug to an available COM port on the Hy-Tek computer.

Note: If the Hy-Tek computer does not have a serial port, a USB-to-serial adaptor must be purchased and installed.

3. Plug the stereo phone jack into a J-box (part # 0A-1091-0227). Route minimum 18 AWG shielded cable (part # W-1117) from the J-box to the **SIGNAL IN** terminal block on the rear of the display (red to TB-1, black to TB-2).

DWG-195172 illustrates the connections needed to download information onto the PC-2002 from the Hy-Tek software.

4. From the TEAM MANAGER main menu, go to **Workouts > Pace Clock > Daktronics Pace Clock**.
5. At the top of the Daktronics Pace Clock menu, select the **Daktronics PC-2000** button. Select the **Verify** menu at the top of the screen and enter the serial port number that the cable is connected to (most likely 1), and then click **OK**.

6. Double-click on the desired workout from the list of available workouts at the bottom of the screen (or simply type the workout number into lane 1). The workout will appear in lane one under *Pace Clock Workout Lane Assignments*. The download will only download the workout for lane 1.
7. Click on the **Transfer** menu in the upper-left corner of the screen. A message should appear that reads "Transfer completed for lanes 1." Click **OK**. The PC-2002 should read "donE". If this does not happen, the download did not work properly.
8. Start the PC-2002 workout by pressing the **<START>** key on the JC-100.

5 Display Maintenance

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.

Display Components

The PC-2002 uses a single printed circuit board (PCB) that contains all of the electronics needed to make this system work: digit LEDs, control processors, power input connectors, horn, and other components. All switches, power systems, and input/output terminations are connected to the PCB.

As shown in **Figure 9**, the PCB is attached to the front panel of the display. Refer to **Replacing the Digit/Driver Printed Circuit Board (p.13)** for instructions on accessing and replacing the PCB.

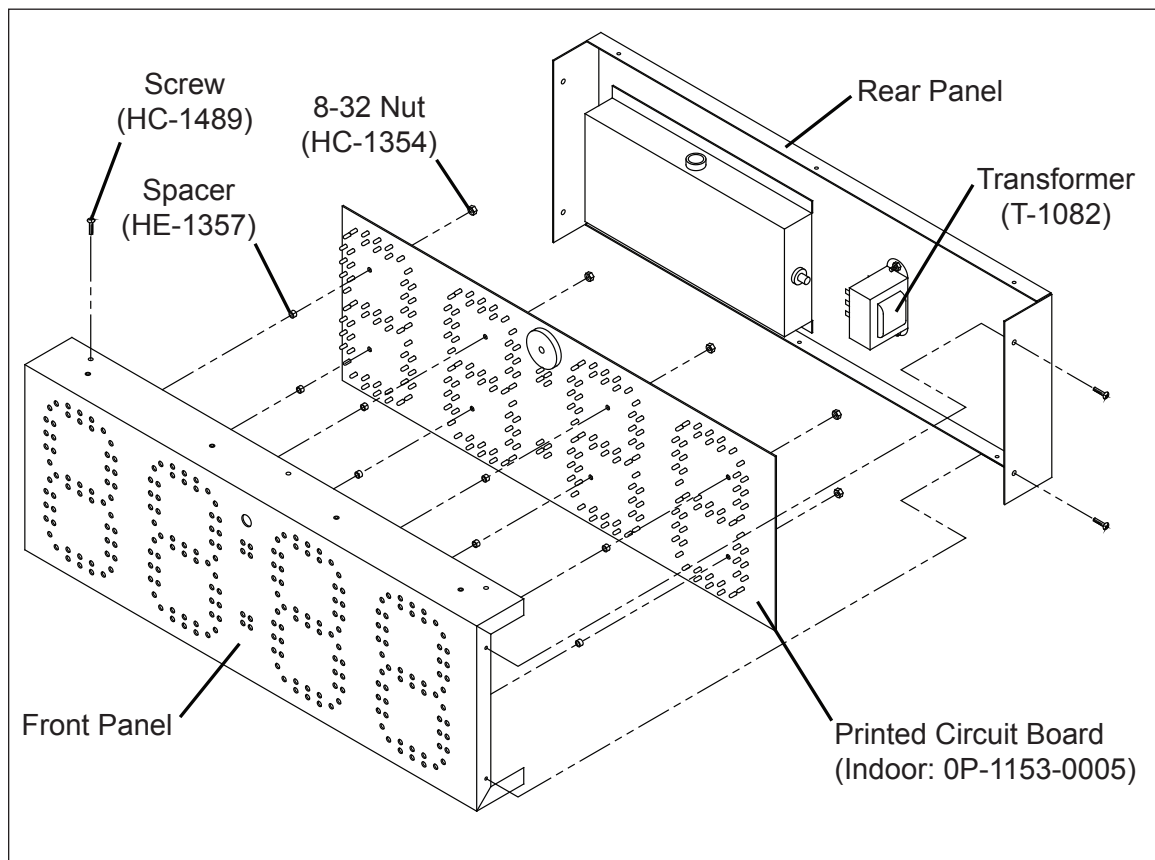


Figure 9: PC-2002 Exploded View

Replacing the Digit/Driver Printed Circuit Board

1. To access the digit/driver PCB, use a Phillips screwdriver to remove the 10 outer screws and separate the front and rear panels of the display.
2. Disconnect all plugs from the PCB 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 plug goes to which jack when connecting the replacement PCB.
3. Remove the 8 nuts securing the PCB to the front panel of the display. Take note of the orientation of the PCB for future reference.
4. Carefully remove the PCB from the studs and spacers on the front panel. Use an even force to prevent any damage that might result from bending the LEDs or connector pins on the board.
5. Position the new PCB over the studs, making sure there are spacers between the front panel and circuit board.
6. Tighten the 8 nuts.
7. Reconnect all plugs to their mating jacks on the PCB. The connectors are keyed and will attach in one way only. Do not force the connections.
8. Close and secure the rear panel with 10 screws, then power on and test the display to verify the issue has been resolved.

Schematics

For advanced troubleshooting and repair, it may be necessary to consult the schematic drawing. **DWG-187843** and **Drawing A-1041025** show 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.

Description	Part Number
Indoor PCB	0P-1153-0005
Surface Mount Hardware	0A-1153-0412
12 V Buzzer	DS-1487
Transformer, 120 VAC	T-1082
5-pin to 6-pin Radio Adapter	W-2913

Refer to **Section 6: Daktronics Exchange and Repair & Return Programs (p.14)** for information on exchanging or returning parts.

6 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:

1. Call Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

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 Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

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.

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A Reference Drawings

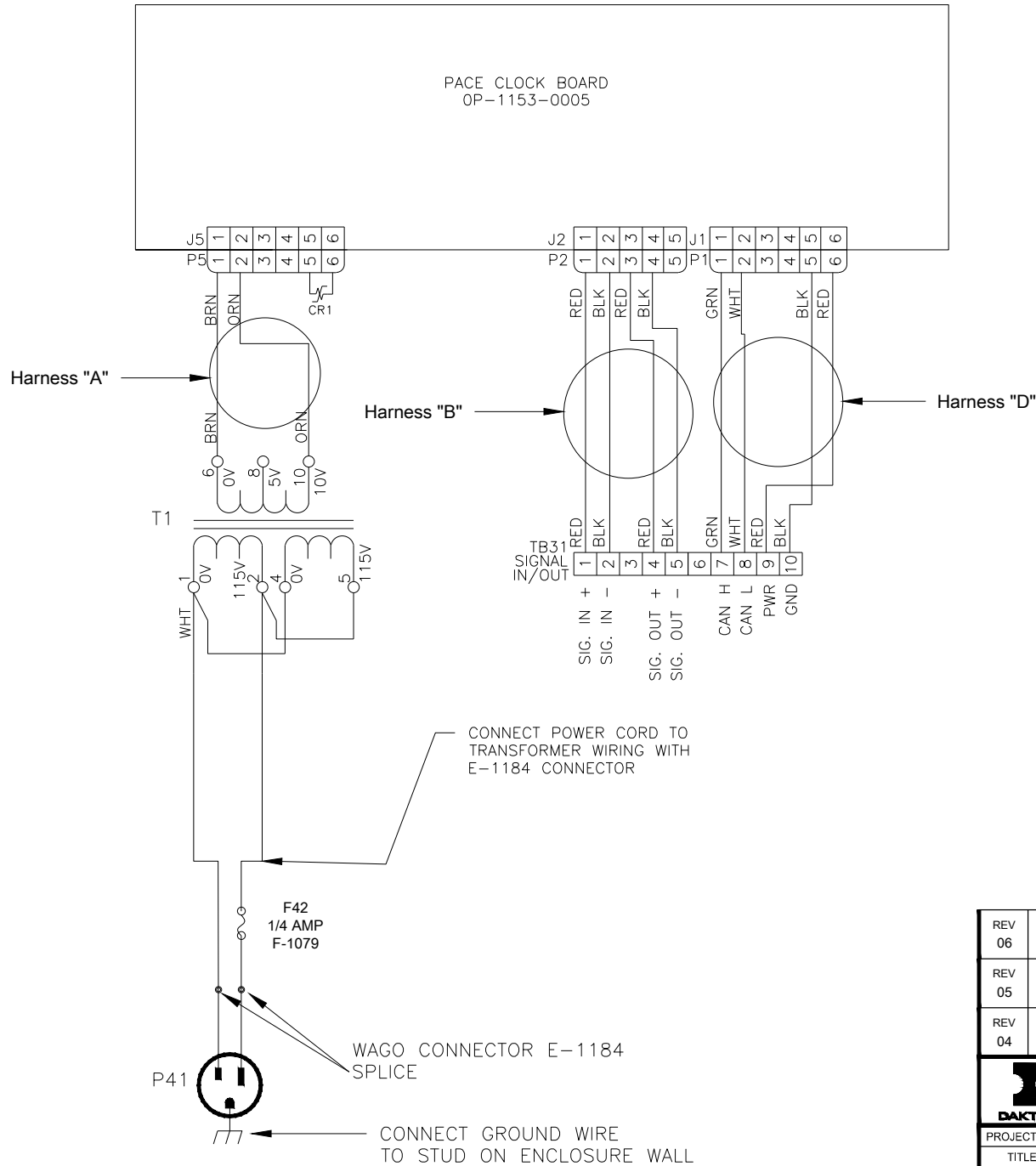
Refer to **Resources (p.2)** for information regarding how to read the drawing number.
Any contract-specific drawings take precedence over the general drawings.

Reference Drawings:

Schematic; PC-2002.....	DWG-187843
Riser Diagram; PC-2002 Permanent Install.....	DWG-191740
Insert, LL-2584, JC-100 Pace Clock	DWG-191855
Riser Diagram; PC-2001 & PC-2002.....	DWG-195172
Schematic, PC-2002, 240 VAC.....	DWG-1041025

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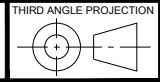
PACE CLOCK BOARD
OP-1153-0005



REV 06	DATE: 15 JAN 16	ADDED FUSE AND WAGO CONNECTORS TO REPLACE WIRE NUTS PER EC-19643	BY: CLT
REV 05	DATE: 23 APR 14	ADDED NOTE ABOUT GROUND WIRE	BY: KDD
REV 04	DATE: 21 JUN 13	PER EC-11032 CORRECTED DRAWING ORIENTATION	BY: DCS



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PROJECT:			
TITLE: SCHEMATIC- PC-2002			
DATE: 29 APR 03	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: NTS	DO NOT SCALE DRAWING		06
DESIGN: CBRECZI	JOB NO. P1153	FUNC - TYPE - SIZE R - 03 - A	187843
DRAWN: CBRECZI			

01	15 JULY 03	ADDED NOTE FOR PHONE JACK J-BOX (0A-1091-0227).	CME
02	19 AUG 03	ADDED CAN TERMINATION PLUG AND UPDATED NOTES ON J-BOX.	NMB
03	21 JUN 13	PER EC-11032 SWAPPED LOCATION OF GRN AND WHT WIRES	DCS
04	13 MAR 14	PER INFO FROM SERVICES AND FIELD INSTALLER, ADDED SOME ID'S TO THE JBOXES AND ADDED SO TEXT TO THE NOTES OF OPERATION.	MMM
05	30 OCT 14	CHANGED W-1117 TO W-1077	KWR

PROJ: **DAKTRONICS, INC.**
 BROOKINGS, SD 57006

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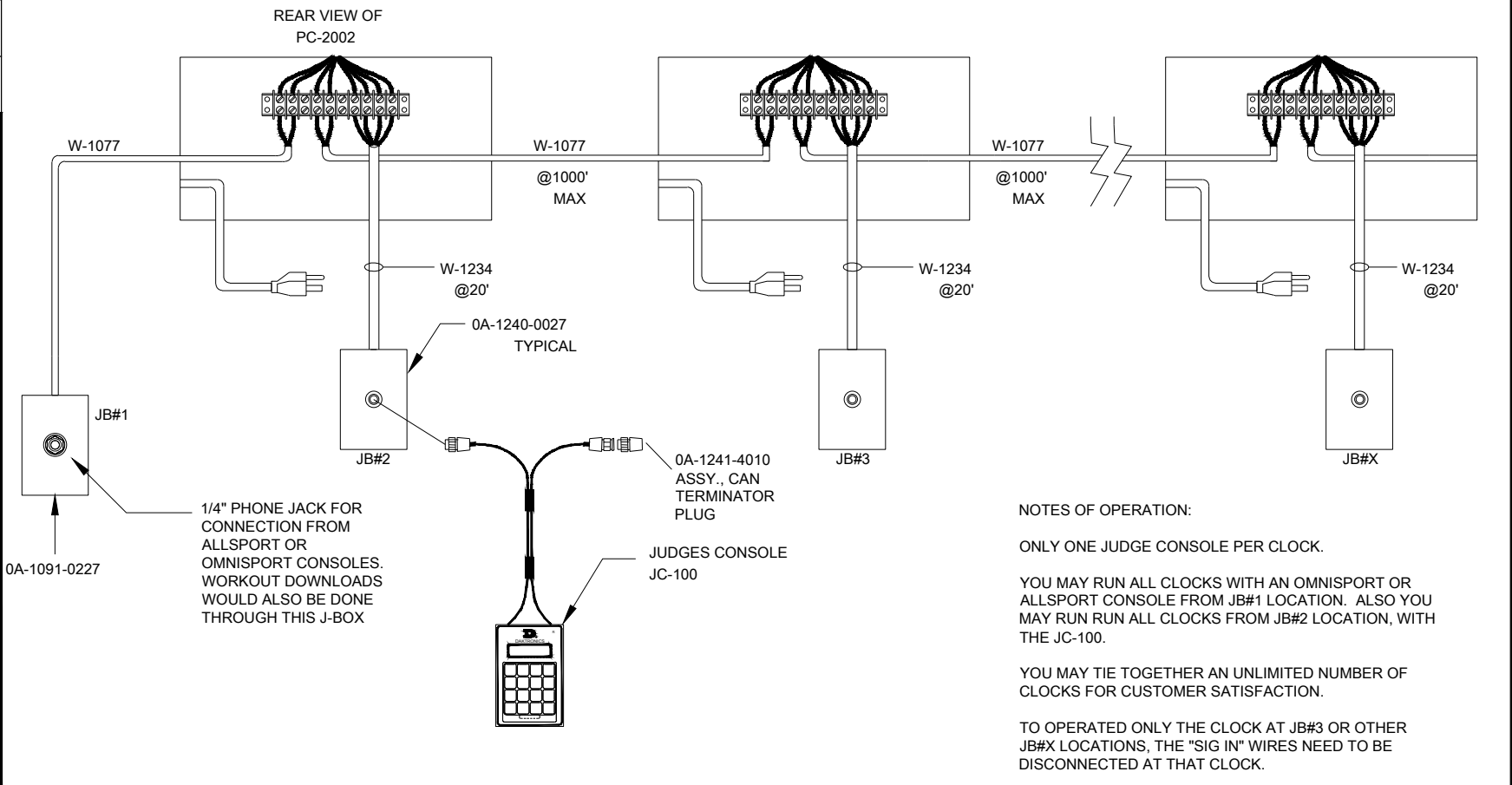
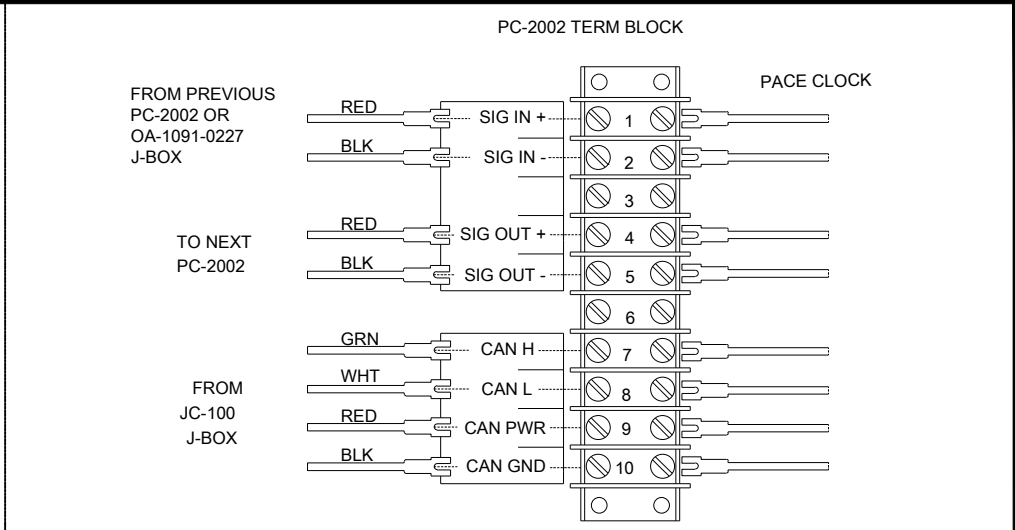
TITLE: **RISER DIAGRAM: PC-2002 PERMENANT INSTALL**

DESIGN: **JWARNE** DRAWN: **CENGELS** DATE: **07 JULY 03**

SCALE: **1=5**

SHEET: **05** REV: **05** JOB NO.: **P1153** FUND-TYPE-SIZE: **R-01-A**

191740



NOTES OF OPERATION:

ONLY ONE JUDGE CONSOLE PER CLOCK.

YOU MAY RUN ALL CLOCKS WITH AN OMNISPORT OR ALLSPORT CONSOLE FROM JB#1 LOCATION. ALSO YOU MAY RUN RUN ALL CLOCKS FROM JB#2 LOCATION, WITH THE JC-100.

YOU MAY TIE TOGETHER AN UNLIMITED NUMBER OF CLOCKS FOR CUSTOMER SATISFACTION.

TO OPERATED ONLY THE CLOCK AT JB#3 OR OTHER JB#X LOCATIONS, THE "SIG IN" WIRES NEED TO BE DISCONNECTED AT THAT CLOCK.

REV 01 DATE: 29 JUN 10 UPDATED GRAY TO MATCH PMS NO. 429

BY: CRD

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
	01	P1240	V-07-A

DATE: 08 JUL 03

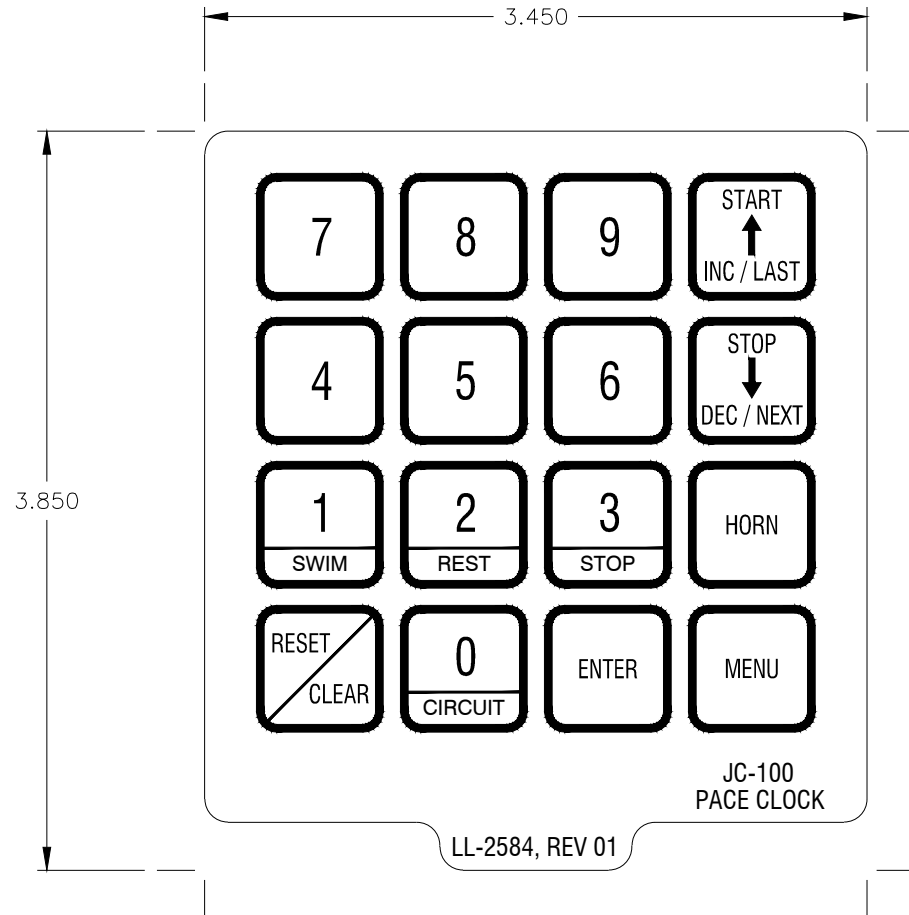
191855



DAKTRONICS, INC.
 BROOKINGS, SD 57006

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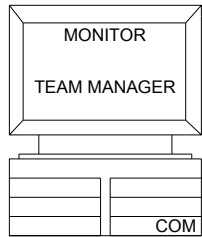
PROJ: TITLE: INSERT, LL-2584, JC-100 PAGE CLOCK
 DESIGN: CBRECZI DRAWN: CBRECZI
 SCALE: 1=1



LL-2584, REV 01

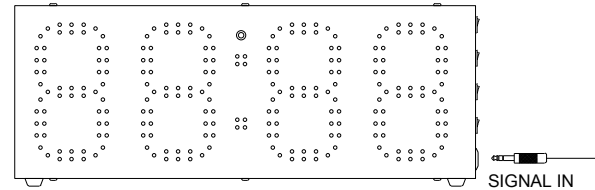
JC-100
PAGE CLOCK

1. DAKTRONICS PART NUMBER IS LL-2584
2. ALL TEXT AND KEY OUTLINES ARE BLACK
3. INSERT BACKGROUND TO BE GRAY TO MATCH PMS# 429
4. OUTLINE IS DIE CUT PER DRAWING 1196-V07A-139763.



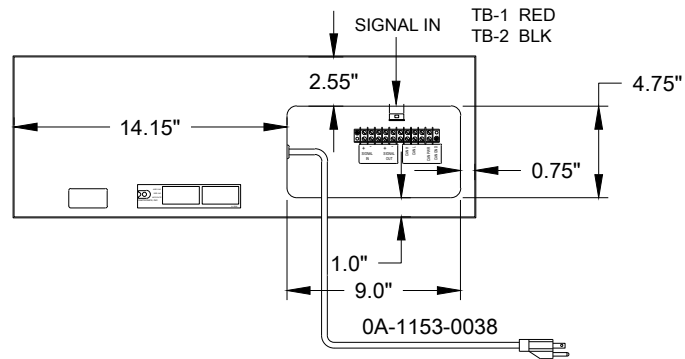
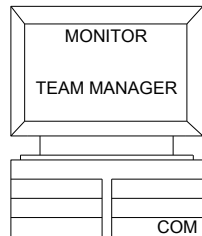
PC-2001

0A-1153-0036 (20')

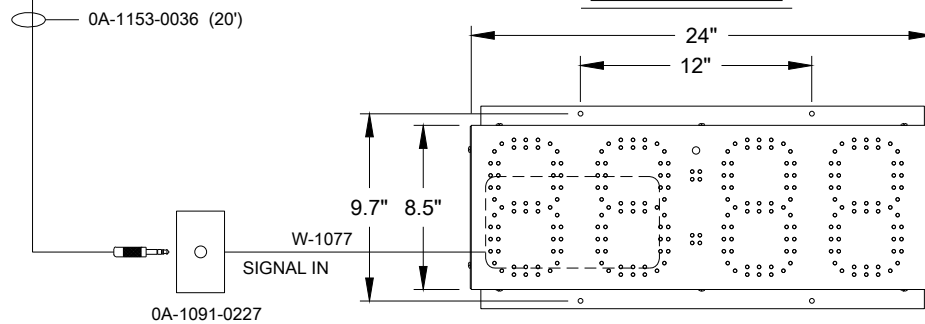


PC-2002

REAR VIEW



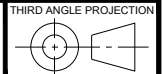
FRONT VIEW



REV 02	DATE: 29 AUG 18	UPDATED PC-2002 MODEL VIEWS	BY: MTR
REV 01	DATE: 30 OCT 14	CHANGED W-1117 TO W-1077	BY: KWR

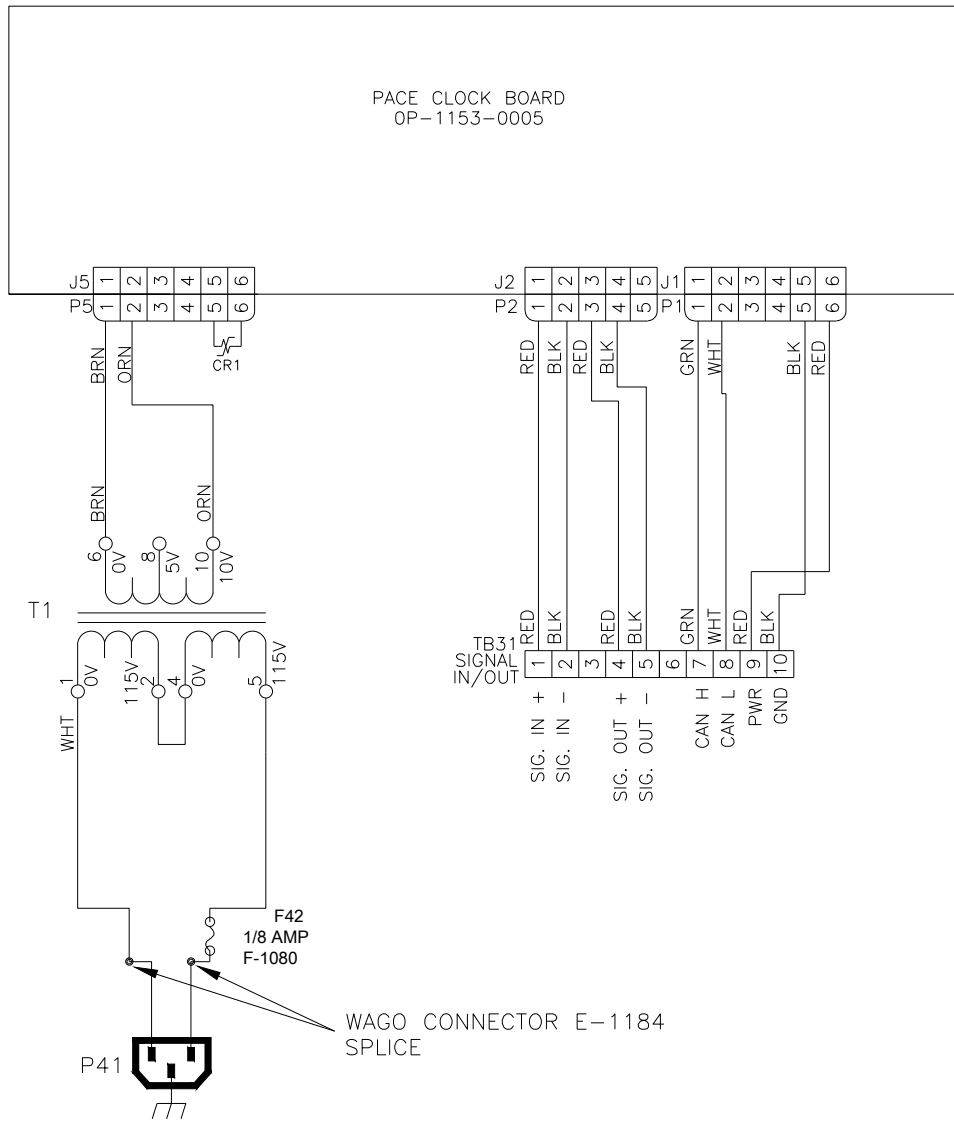



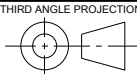
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PROJECT:			
TITLE: RISER DIAGRAM: PC-2001 AND PC-2002			
DATE: 19AUG03	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV 02
SCALE: NONE	DO NOT SCALE DRAWING		
DESIGN:	JOB NO. P1153	FUNC - TYPE - SIZE R - 03 - A	195172
DRAWN: NBOWERS			

240
VAC



REV 01	DATE: 15 JNA 16	ADDED FUSE AND WAGO CONNECTORS PER EC-19643	BY: CLT
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PROJECT: PACE CLOCK			
TITLE: SCHEMATIC, PC-2002, 240 VAC			
DATE: 23 DEC 2010	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: 1=1	DO NOT SCALE DRAWING		01
DESIGN: CENGELS	JOB NO. P1153	FUNC - TYPE - SIZE R - 03 - A	1041025
DRAWN: CENGELS			

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B Daktronics Warranty & Limitation of Liability

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

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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;

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

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

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

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	Kruikeke, Belgium
Daktronics Ireland Co. Ltd.	Ireland	Dublin, Ireland

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