

**DataMaster™ Outdoor LED
Gasoline Price Displays
DF-1024/DF-1026 Series
DF-1200 Series**

Installation and Operation Manual

ED-15177

Rev 2 – 27 April 2005

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DAKTRONICS, INC.

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DataMaster Gasoline Price Displays

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Section 1: Introduction

This manual explains the installation, maintenance and troubleshooting of the Daktronics DataMaster™ DF-1024/DF-1026 and DF-1200 LED Gasoline Price Displays. For questions regarding the safety, installation, operation, or service of this system, please refer to the telephone numbers listed on the cover page of this manual.

This manual is divided into 9 sections: Introduction, Mechanical Installation, Electrical Installation, Maintenance and Troubleshooting, Gas Price Display Operation, Appendix A, Appendix B, Appendix C and Appendix D.

- **Introduction** covers the basic information needed to make the most of the rest of this manual – take time to read the entire introduction as it defines terms and explains concepts used throughout the manual.
- **Mechanical Installation** provides general guidance on display mounting.
- **Electrical Installation** gives general guidance on terminating power and signal cables at the display.
- **Maintenance and Troubleshooting** addresses such things as removing basic display components, troubleshooting the display, performing general maintenance and exchanging display components.
- **Gas Price Display Operation** section gives a product overview of the DataMaster controller used to program the Gas Price display.
- **Appendix A** lists the drawings referenced within this manual.
- **Appendix B** lists the Frequently Asked Questions when operating this display.
- **Appendix C** provides information and drawings as a quick reference for installing the display.
- **Appendix D** contains a quick reference to the DataMaster when operating the Gas Price displays.

Daktronics identifies manuals by an ED number located on the cover page of the manual. For example, this manual would be referred to as **ED-15177**.

Listed below are a number of drawing types commonly used by Daktronics, along with the information each is likely to provide.

- **System Riser Diagrams:** overall system layout from DataMaster control location to display.
- **Electrical and Mechanical Speciation Drawings:** driver enclosure locations, mounting information, display dimensions; power and signal entrance points, and access method (front or rear).
- **Schematics:** power wiring, signal wiring, panel board or power termination panel assignments, signal termination panel assignments, and transformer assignments.

Figure 1, below, illustrates the Daktronics drawing label. The drawing number is located in the lower-right corner of each drawing. Listing the last set of digits and the letter preceding them identifies drawings in the manual. In the example below, the drawing would be referred to as **Drawing A-181218**. Reference drawings are inserted in alphanumeric order in **Appendix A**.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: DATATIME LED DISPLAYS		
TITLE: MECHANICAL SPECS, DF-1010-24, G3		
DES. BY: AVB	DRAWN BY: A GIBSON	DATE: 09 JAN 03
REVISION	APPR. BY:	1279-RO4A-181218
	SCALE: 1 = 16	

Figure 1: Daktronics Drawing Label

All references to drawing numbers, appendices, figures, or other manuals are presented in **bold** typeface, as shown below.

“Refer to **Drawing A-181218** for the display dimensions.”

Additionally, drawings referenced within a particular section are listed at the beginning of that section as shown in the following example:

Reference Drawing:
 Mechanical Specs, DF-1010-24, G3..... **Drawing A-181218**

The model numbers of a Daktronics display can be found on the ID label on the display. The label will be similar to the one shown in **Figure 2**. When calling Daktronics Customer Service, please have this information available to ensure that your request is serviced as quickly as possible.

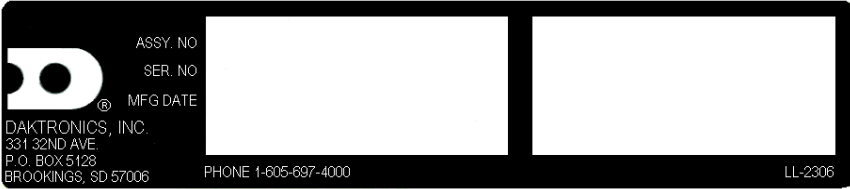


Figure 2: Display Identification Label

Daktronics displays are built for long life and require little maintenance. However, from time to time, certain display components may need replacing. The **Replacement Parts List** in **Section 4-11** provides the names and part numbers of components that may require replacement during the life of the display. Most display components have a white label that lists the part number. The component part number is in the following format: OP-____-____ (component) or OA-____-____ (multi-component assembly).

Following the **Replacement Parts List** is an explanation of **Daktronics Exchange and Repair and Return Programs**. Refer to these instructions if any display component needs replacement or repair.

1.1 Safety Precautions

Important Safeguards:



1. Read and understand these instructions before installing your display.
2. Do not drop the controller or allow it to get wet.
3. Properly ground the display with a ground rod at the sign location.
4. **Disconnect power when the display is not in use.**
5. **Disconnect power when servicing the display.**
6. Do not modify the display structure or attach any panels or coverings without the express written consent of Daktronics, Inc.

1.2 Network Concepts

The concept of using LED displays as a cost effective, high impact method of communication is rapidly growing throughout many industries and businesses. The common thread of most requests is a means of programming and controlling the displays in a variety of ways.

There are three communication methods available: Current Loop, Radio, and Modem.

Current Loop

The DataMaster controller connects to the Gas Price Display either from a j-box located outside near the display or from an indoor location. The communication method is current-loop to the host display, and from the host to the client. Current-loop is a standard communication method that uses a maximum cable length of 600 meters (approximately 2000 feet). Refer to **Section 3** for additional information and connections.

Radio

The radio network is a standard communication method that uses radio waves at high frequencies to transmit signal. The radio network has a maximum distance of 450 meters (approximately 1,500 feet). A nearly straight line-of-sight path must be maintained between the Server Radio connected to the DataMaster controller, through a signal converter, and the Client Radio connected to the display. Refer to **Section 3** (Electrical Installation) and the **Section 5** (Gas Price Display Operation) for additional information.

Modem

The modem is a standard communication interface that utilizes standard phone transmission lines. The phone company assigns each phone line a number that the modem uses to communicate between the DataMaster and display. Each modem network needs to have a dedicated phone line assigned to it. Refer to **Section 3** (Electrical Installation) and the **Section 5** (Gas Price Display Operation) for additional information.

1.3 Product Overview

DataTime and DataMaster displays are part of a family of Daktronics digit products designed for easy installation, readability and reliability.

The DataTime/DataMaster Series includes:

- **Gasoline Price Displays:** gas price signs with three standard digits, decimal, and $\frac{9}{10}$ fraction.
- **Rate Displays:** two- or four-digit signs, typically used to display hotel/motel room rates or commodity prices.
- **Lottery Displays:** three-digit signs typically used to display lottery jackpots.
- **Parking Garage Displays:** four-digit display used for parking locations requiring a DataMaster, switch inputs or third-party software.
- **Event Counters:** These displays are typically used to count to a designated goal. They will count either up or down, and can be up to nine digits long.
- **Time & Temperature Displays:** Automatic Time & Temp signs capable of displaying temperatures in Fahrenheit or Celsius (three digits, degree symbol, and F and C character) and 12- or 24-hour time.

The DataMaster series includes gasoline, rate and parking displays, along with lottery and event counters. The DataTime series name is used for time and temperature displays only.

These displays have the following features:

- These displays use LEDs to illuminate their numeric digits.
- Power usage for individual displays in this series is a maximum 300 W. All models have a 120 V power requirement.
- All DataMaster displays are configured with red, amber or green LEDs.
- DataMaster cabinets are constructed of heavy-gauge aluminum.
- Digit faceplates are black, and they are set directly into the surface of the display.
- Mounting weights and dimensions for each model are listed in **Section 2** of this manual.
- The DataMaster outdoor LED displays have been designed for use with a DataMaster™ 100 hand-held controller. The device uses a keyboard insert for display control. **Section 5** of this manual provides operating instructions.

The DataMaster model numbers are described as follows: DF-102X-HH-C

DF-102X	:	Outdoor Digit Display (1024 full cabinet with top backlit ID panel or 1026 full cabinet with left side backlit product ID panel)
HH	:	Digit height in inches (10, 13, 18, 24, 36, 48 and 60)
C	:	LED Color- R (Red), A (Amber), G (Green - 13", 18", and 24")

1.4 Component Identification

The following list includes some of the more commonly used terms when referring to these displays. Because Daktronics occasionally alters standard design to meet customer needs, the actual display design may vary slightly from the illustrations below.

This is only a brief overview. Refer to **Section 4** for additional information on maintaining the various display components.

Client: The client display contains a client driver that receives signal from the “host” driver on the Signal IN terminals. These drivers can re-drive signal to other client drivers.

DataMaster Controller (DM100): The handheld keyboard-like device used to set the time, date, hold times, dimming etc. on the Gas Price display. See **Section 5** for more information on the DataMaster controller.

Display Address: The display address is an identification number assigned to each driver in a network. The address is set using an 8-position binary switch on the driver board. For single-line signs such as a Time & Temp display, the address will typically be “1”. For Gas Price displays, the top display is often set to address “1” and the others are set to “2”, “3” etc. The address will be displayed each time the display powers up.

Digit Circuit Board: The LEDs are mounted to a circuit board, which mounts to the back of a digit panel. Problems with individual digits, segments or LEDs may require accessing or replacing this board.

Host/Primary: The host display contains the host driver which relays signal directly from the DataMaster controller on its Signal IN terminals. It is the only driver connected to the temperature/light sensor. The Signal OUT terminals are used to connect to the client driver. The host driver is selected by inserting the protocol 4-plug into the protocol jack.

LED (light emitting diode): LEDs are high-intensity, low-energy lighting units.

Mirror/slave: receives power and a digit harness from the master but does not have a driver.

Power Supply: Converts AC line voltage from the load center to low DC voltage for one or more digit circuit boards.

Protocol plug: The protocol 4-plug is inserted in the 5-pin protocol jack to select the host driver for a set of host-client displays.

1.5 Daktronics Nomenclature

To fully understand some Daktronics drawings, such as schematics, it is necessary to know how various components are labeled in those drawings. You will find this information useful when trying to communicate maintenance or troubleshooting efforts.

The following labeling formats might be found on various Daktronics drawings:

- “TB __” denotes a termination block for power or signal cable.
- “E __” denotes a grounding point.
- “J __” denotes a power or signal jack.
- “P __” denotes a power or signal plug for the opposite jack.

Finally, Daktronics part numbers are commonly found on drawings. Those part numbers can be used when requesting replacement parts from Daktronics Customer Service. Take note of the following part number formats. (Not all possible formats are listed here.)

- “OP- _____” denotes an individual circuit board, such as a driver board.
- “OA- _____” denotes an assembly, such as a circuit board and the plate or bracket to which it is mounted. A collection of circuit boards working as a single unit may also carry an assembly label.
- “W- _____” denotes a wire or cable. Cables may also carry the assembly numbering format in certain circumstances. This is especially true for ribbon cables.

Most circuit boards and components within this display carry a label that lists the part number of the unit. If a circuit board or assembly is not listed in the **Replacement Parts List** in **Section 4.6**, use the label to order a replacement. A typical label is shown in **Figure 3**. The part number is in bold.

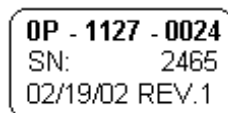


Figure 3: Typical Label

Section 2: Mechanical Installation

Note: Daktronics **does not** guarantee the warranty in situations where the display is not in a constant environment.

Daktronics engineering staff must approve **any** changes that may affect the weather-tightness of the display. If any modifications are made, detailed drawings of the changes must be submitted to Daktronics for evaluation and approval, or the warranty may be void.

Daktronics is not responsible for installations of structural integrity of support structures done by others. It is the customer's responsibility to ensure that a qualified structural engineer approves the structure and any additional hardware.

2.1 Mechanical Installation Overview

Mechanical installation typically consists of mounting the display and any accompanying panels to the support structure.

The table below shows all of the weights and dimensions for each model in this series. Models are listed in order by digit size

**Full Cabinet Models with backlit product ID panel above digits
Dimensions and Weight**

Model	Dimensions Height, Width, Depth	Weight	Digit Size
DF-1024-10	H1'-9", W3'-0", D6" (533 mm, 914 mm, 152 mm)	35 lb 16 kg	10" (254 mm)
DF-1024-13	H2'-2", W3'-6", D6" (660mm, 1067 mm, 152 mm)	45 lb 20 kg	13" (330 mm)
DF-1024-18	H3'-0", W5'-0", D6" (914 mm, 1524 mm, 152 mm)	80 lb 36 kg	18" (457 mm)
DF-1024-24	H4'-0", W6'-0", D6" (1219 mm, 1829 mm, 152 mm)	120 lb 54 kg	24" (610 mm)
DF-1024-36	H5'-6", W8'-0", D8" (1676 mm, 2438 mm, 203 mm)	190 lb 73 kg	36" (914 mm)
DF-1024-48	H7'-0", W11'-0", D8" (2134 mm, 3353 mm, 203 mm)	320 lb 145 kg	48" (1219 mm)
DF-1024-60	H9'-0", W14'-0", D8" (2743 mm, 4267 mm, 203 mm)	590 lb 268 kg	60" (1524 mm)

**Full Cabinet Models with backlit product ID panels left of digits
Dimensions and Weight**

Model	Dimensions	Weight	Digit Size
DF-1026-10	H1'-3", W5'-0", D6" (381 mm, 1524 mm, 152 mm)	40 lb 18 kg	10" (254 mm)
DF-1026-13	H1'-6", W6'-0", D6" (457 mm, 1829 mm, 152 mm)	50 lb 23 kg	13" (330 mm)
DF-1026-18	H2'-0", W8'-0", D6" (610 mm, 2438 mm, 152 mm)	80 lb 36 kg	18" (457 mm)
DF-1026-24	H2'-6", W10'-0", D6" (762 mm, 3048 mm, 152 mm)	120 lb 54 kg	24" (610 mm)
DF-1026-36	H3'-6", W13'-0", D8" (1067 mm, 3962 mm, 203 mm)	190 lb 73 kg	36" (914 mm)
DF-1026-48	H4'-6", W16'-6", D8" (1372 mm, 5029 mm, 203 mm)	320 lb 145 kg	48" (1219 mm)
DF-1026-60	H6'-0", W20'-0", D8" (1829 mm, 6096 mm, 203 mm)	590 lb 268 kg	60" (1524 mm)

Full Cabinet Models with backlit product ID panels below digits, or on the left- Dimensions and Weight

Model	# of products displayed	Dimensions	Weight	Digit Size
DF-1202	2	H3'-3", W9'-4. 50", D6" (991 mm, 2858 mm, 152 mm)	160 lb 73 kg	18" (457 mm)
DF-1203	4	H6'-0", W7'-7 .20", D6" (1829 mm, 2316 mm, 152 mm)	240 lb 109 kg	13" (330 mm)
DF-1204	2	H2'-3", W7'-7. 20", D6" (686 mm, 2316 mm, 152 mm)	100 lb 45 kg	10" (254 mm)
DF-1205	3	H2'-3", W9'-4. 50", D6" (686 mm, 2858 mm, 152 mm)	110 lb 50 kg	10" (254 mm)
DF-1206	3	H6'-0", W9'-4. 50", D8" (1829 mm, 2858 mm, 203 mm)	300 lb 136 kg	18" (457 mm)
DF-1207	2	H5'-0", W9'-4. 50", D8" (1524 mm, 2858 mm, 203 mm)	250 lb 113 kg	24" (610 mm)

2.2 Lifting the Display

Model DF- displays are shipped equipped with $\frac{3}{8}$ " eyebolts that are used for lifting and positioning the modules. Eyebolts are located along the top outer edges of the cabinet.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Using a spreader bar ensures that the force on the eyebolts is straight up, minimizing lifting stress. **Figure 4** illustrates both the correct (left example) and the incorrect (right example) method for lifting a display. Lift the display as shown on the left, with a lifting bar. Be sure to use every lifting point provided.

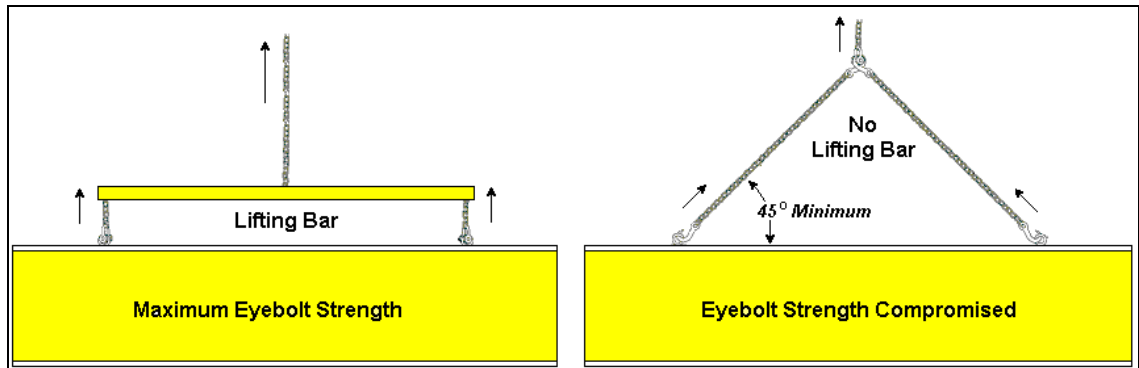


Figure 4: *Lifting the Display*

Note: Daktronics assumes no liability for display damage or injury resulting from incorrect setup or incorrect lifting methods.

Eyebolts are intended for lifting during installation only. **Do not attempt to permanently support the display by the eyebolts.**

In installations where an ad panels or some other display section may be added to the base display, the lower section is installed first and secured to the support beams, and then the upper section is placed atop or above the lower sign section and attached to the beams. There may be cables extending from the top of the lower section. Guide these cables into the hole in the bottom of the upper section for later connection.

Installers may remove the lift eyebolts once the display is in place. When removing the eyebolts, adequately seal the holes using bolts and sealing washers. Smaller displays use $\frac{3}{8}$ "-16 bolts, larger displays use $\frac{1}{2}$ "-13 bolts into the holes. In addition, inspect the top and sides of the display for any holes or openings that may allow moisture to enter the display, and plug and seal those openings with silicone.

Section 3: Electrical Installation

Daktronics outdoor displays are UL listed and tested to CSA standards for outdoor use. Contact Daktronics with any questions regarding the testing procedures.

Only qualified individuals should perform power routing and termination to the display. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes.

3.1 Preparing for Power/Signal Connection

Reference Drawing:

Quick Install, DF-1020 Gas Price Displays.....**Drawing A-189768**

Electrical installation consists of the following processes:

- Providing power and ground to a disconnect near the display.
- Routing power and ground from the main disconnect to the display driver/power enclosure.
- Connecting the display ground to a grounding electrode at the sign location.
- Routing the control signal cable from the control location to the sign location.

Drawing A-189768 provides detailed instructions for power and signal connections for the DataMaster Gas Price displays, including hook-up of the connections between host and client displays. Refer to this drawing before undertaking any part of the electrical installation.

3.2 Power and Grounding Connections

Correct power and grounding installation is imperative for proper display operation. The subsections that follow give details of display power installation. Only qualified individuals should attempt to complete the electrical installation. Improper installation could result in serious damage to the equipment and could be hazardous to personnel.

Power

Daktronics DataMaster displays have been designed for easy access to components, and the power and control signal hookup. Front panels are removable or hinged to allow access to the digits, cabling, and other electronic components.

The DataMaster, Gas Price displays require a dedicated, 120 V circuit for incoming power. The display itself has no breakers or fuses.

WARNING: It is critical that the display circuit be fused at 15 A, and that all conductors used must be designed to pass a 15 A current in normal operation. Failure to meet wiring and over current protection device requirements is a violation of the National Electrical Code® and will void the display warranty.

The tables below show the circuit specifications and maximum power requirements for each model. Models are listed in order by digit size.

Full Cabinet Model - Gas Price Displays – Power Requirements

Model	Digit Size	Maximum Wattage	Circuit
DF-1024-10/ DF-1026-10	10" (254 mm)	350 W	120 V AC 3 A
DF-1024-13/ DF-1026-13	13" (330 mm)	350 W	120 V AC 3 A
DF-1024-18/ DF-1026-18	18" (457 mm)	350 W	120 V AC 3 A
DF-1024-24/ DF-1026-24	24" (610 mm)	350 W	120 V AC 3 A
DF-1024-36/ DF-1026-36	36" (914 mm)	600 W	120 V AC 5 A
DF-1024-48/ DF-1026-48	48" (1219 mm)	600 W	120 V AC 5 A
DF-1024-60/ DF-1026-60	60" (1524 mm)	600 W	120 V AC 5 A

Grounding

Reference Drawings:

Enclosed Driver, 4 Column Reference**Drawing A-184918**

Displays **MUST** be grounded according to the provisions outlined in Article 250 of the National Electrical Code and according to the specifications in this manual. Daktronics requires a resistance-to-ground of 10 ohms or less.

The contractor performing the electrical installation can verify ground resistance. Technicians from Daktronics Sales and Service offices can also provide this service.

The display system **must** be connected to an earth electrode installed at the display. Proper grounding is necessary for reliable equipment operation. It also protects the equipment from damaging electrical disturbances and lightning. The display **must be** properly grounded, or the warranty will be void. Refer to **Drawing A-184918**, for information on where to connect the grounding wire. Connection at the driver enclosure terminal block is illustrated at the bottom of the drawing.

The material for an earth-ground electrode differs from region to region and may vary according to conditions present at the site. Consult the National Electrical Code and any local electrical codes that may apply. The support structure of the display cannot be used as an earth-ground electrode. The support is generally embedded in concrete, and if it is in earth, the steel is usually primed or it corrodes, making it a poor ground in either case.

Power Installation

There are two considerations for power installation: installation with ground and neutral conductors provided, and installation with only a neutral conductor provided. These two power installations differ slightly, as described in the following paragraphs:

Installation with Ground and Neutral Conductors Provided

For this type of installation, the power circuit **must** contain an isolated earth-ground conductor. Under this circumstance, **do not** connect neutral to ground at the disconnect or at the display. This would violate electrical codes and void the warranty. Use a disconnect so that all hot lines and neutral lines can be disconnected. The National Electrical Code requires the use of a lockable power disconnect within sight of or at the display.

Installation with Only a Neutral Conductor Provided

Installations where no grounding conductor is provided must comply with Article 250-32 of the National Electrical Code. If the installation in question meets all of the requirements of Article 250-32, the following guidelines must be observed:

- Connect the grounding electrode cable at the local disconnect, never at the display driver/power enclosure.
- Use a disconnect that opens all of the ungrounded phase conductors.

3.3 Lightning Protection

The use of a disconnect near the display to completely cut all current-carrying lines significantly protects the circuits against lightning damage. The National Electrical Code also requires it. In order for this device to provide protection, the power **must** be disconnected when the display is not in use. The control console should also be disconnected from power and from the signal j-box when the system is not being used. The same surges that may damage the display's driver can also damage the driver console's circuit.

3.4 Signal Connection

Reference Drawings

- 4 Column MASC LED Driver Specifications..... **Drawing A-166216**
- 8 Column MASC LED Driver Specifications..... **Drawing A-167237**
- 16 Col. MASC Driver Specification..... **Drawing A-184475**
- Enclosed Driver, 4 Column Reference..... **Drawing A-184918**
- Quick Install, DF-1020 Gas Price Displays **Drawing A-189768**

Route power and signal cables into the display from the side or rear. There are knockouts for $\frac{1}{2}$ " and $\frac{3}{4}$ " conduit fittings on the sides of all DataMaster cabinets and on the back panels. All power and signal wiring terminates at the driver enclosure.

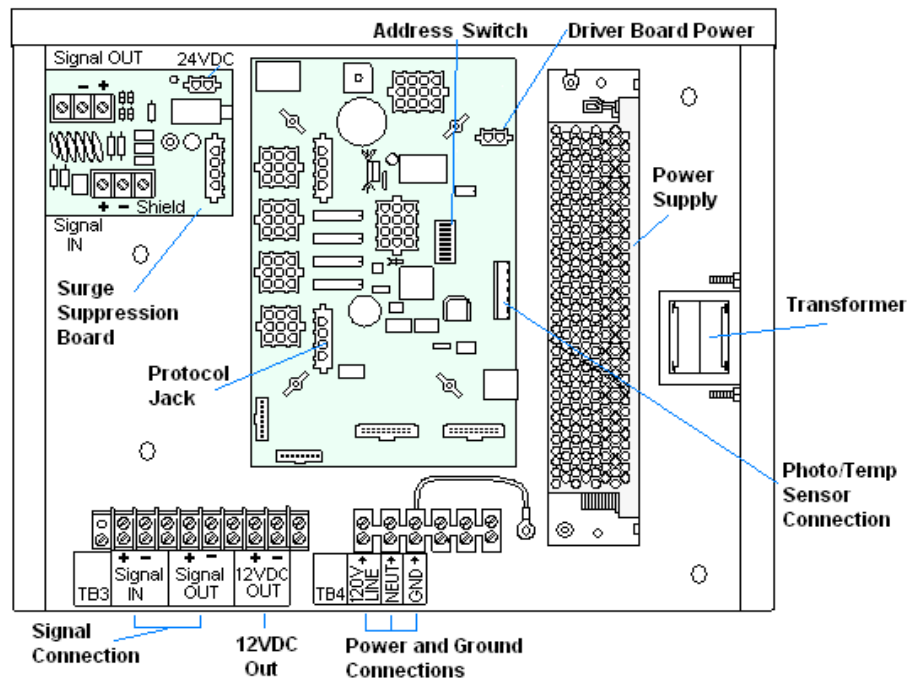


Figure 5: DataMaster Driver Enclosure with 4-Column Driver

To gain access to the driver enclosure, open the access door and remove the cover from the enclosure. Refer to the **Electrical Specifications Drawings** for the access location for your sign. For smaller digit displays, access to the interior components is gained by removing the screws from the hinged door. In the larger digit displays, there are door latches that allow access to the interior components by removing the digits.

Refer to **Drawing A-189768** for a complete review of power and signal connections for Gasoline Price displays. **Drawings A-184918, A-167237 and A-184475** illustrate and provide connection specifications for the different drivers used in DataMaster Gas Price displays. The power and signal connections, illustrated in **Figure 5**, are similar for all three drivers.

Current Loop (Direct)

Reference Drawings:

- Riser Diagram, Outdoor Wire Control.....**Drawing A-164988**
- Riser Diagram, Indoor Wire Control.....**Drawing A-175342**
- Enclosed Driver, 4 Column**Drawing A-184918**
- Quick Install, DF-1020 Gas Price Displays.....**Drawing A-189768**

A direct controlled display uses a current loop connection from the j-box at the base of the display to the driver enclosure in the sign. All the power and signal wiring terminate at the driver enclosure. The DataMaster hand-held controller receives its power from the display. The display layout is shown in **Figure 6** and **Drawing A-164988**.

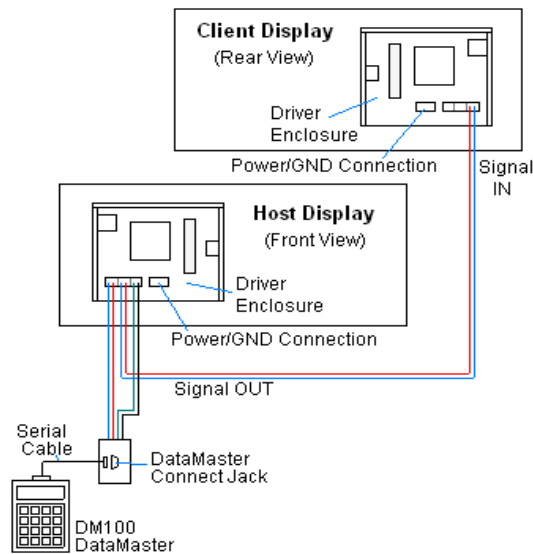


Figure 6: Direct, Current Loop Layout

Note: The cable from the j-box to the display needs to be routed through conduit or the display pole to protect it from weather and vandalism.

1. Mount the j-box near the display.
2. Route a 4-conductor, 22 AWG, shielded cable through conduit from the j-box to the driver enclosure in the host display. (**Distance limit** from the j-box to the display is 50 ft.)
3. Connect the signal/power cable from the j-box to the driver enclosure as shown in **Figure 7** and listed in the table. Refer to **Drawings A-175342** and **A-184918** for additional information.
4. Using a DB9M to DB9F serial cable, plug the DataMaster controller into the J-box, connected to the Host Display Driver Enclosure

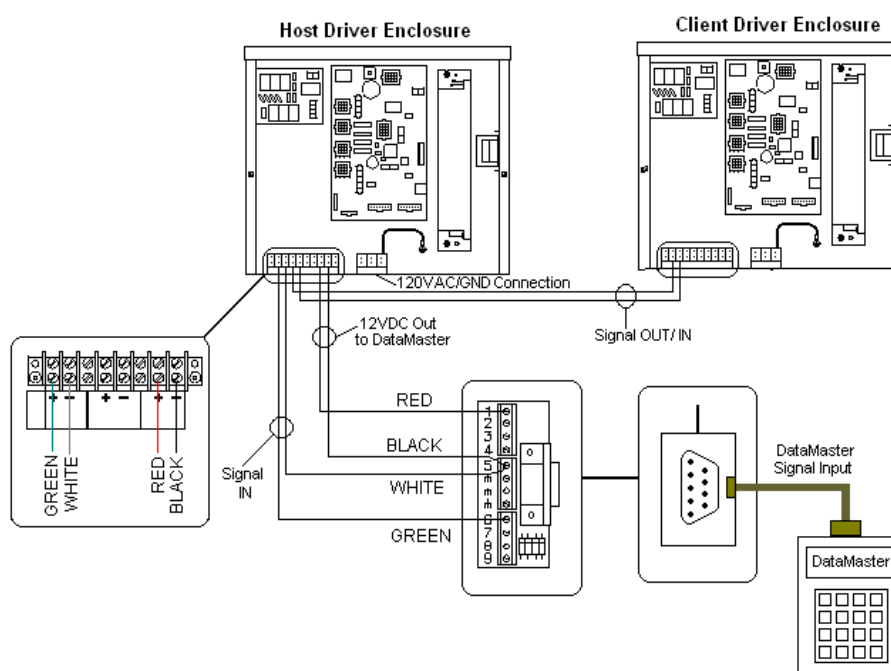


Figure 7: Direct Current Loop Connection

J-Box to Driver Enclosure Input Jack

J-Box Pin#	Cable Color	Enclosure Terminal Block
Pin 1	Red	12V DC Out (+) pin 7
Pin 5	Black	12 V DC Out (-) Pin 8
Pin 5	White	Signal IN (-) Pin 2
Pin 6	Green	Signal IN (+) Pin 1

If using the DataMaster handheld controller at an indoor location, only the two, 22 AWG, signal wires (white and green) will need to be connected to the j-box. A wall pack transformer, plugs into the indoor j-box, and provides power to the DataMaster controller. The distance from the indoor j-box to the host driver can be up to 2000 ft. Refer to **Figure 8** and **Drawing A-175342** for system layout and signal connections.

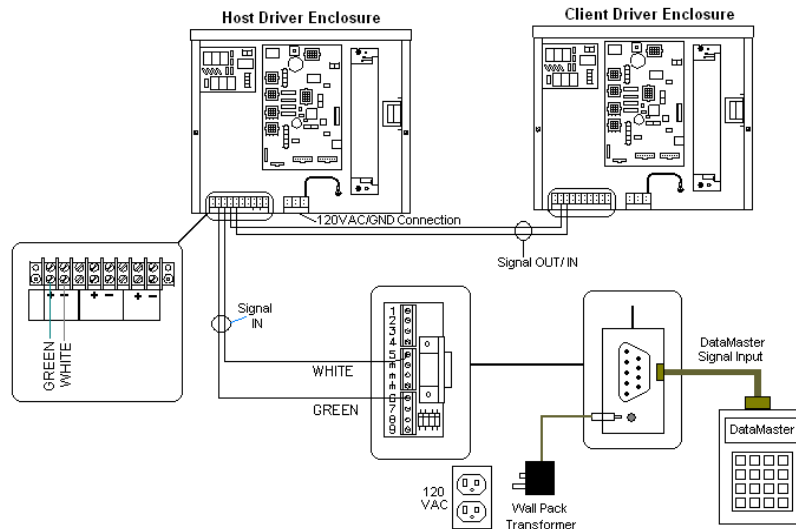


Figure 8: Direct Connection from Indoor Location

Radio (Direct)

Reference Drawings:

- Quick Install, DF-1020 Gas Price Displays.....**Drawing A-189768**
- System Riser Diagram, Server/Client Setup.....**Drawing A-199834**

A radio controlled display uses the DataMaster controller inside connected to a j-box. The j-box is then wired to a server radio attached to the building. A second radio, called the client is connected to the Gas Price display. The DataMaster handheld controller and server radio receive their power from the j-box. A wall pack transformer powers the j-box. The client radio receives its power from the display. The display layout is shown in **Figure 9** and **Drawing A-199834**.

1. Using the DB9M to DB9F serial cable, connect from the DataMaster controller to the J-box, at the “DB9 Male, DataMaster 100 connect” jack.
2. Using an 18-AWG, 6-conductor, shielded cable, (W-1370) connect from the j-box jack labeled “RS422 to Radio or 422 Device” to the TB1 jack on the Server radio, mounted to the building. See **Figure 10** and the table below for cable connections from the j-box to the radio.
3. Plug the wall pack transformer into the j-box and then into a 120V grounded outlet.
4. Mount the Client radio on the display or display pole, and within 25 feet of the display.
5. Plug the quick connect cable from the client radio into the 6-pin quick connect jack on the side of the Gas price display.

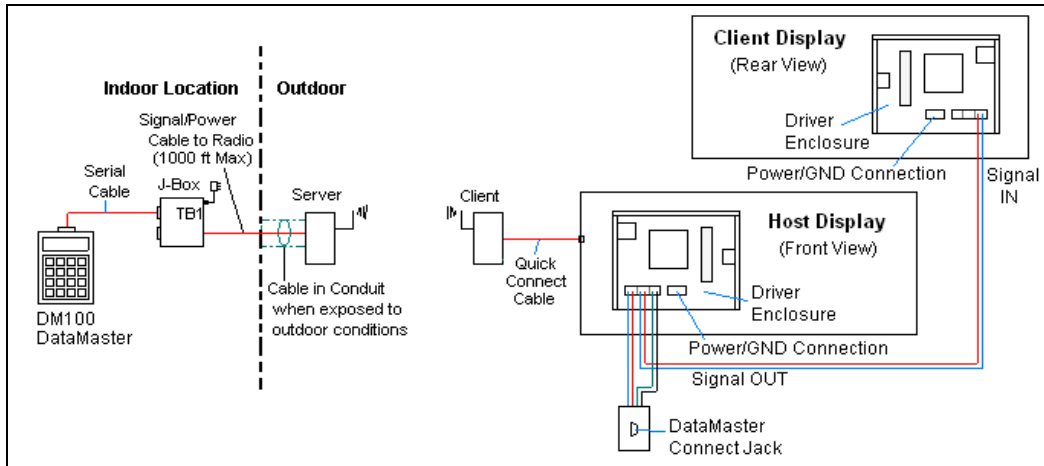


Figure 9: Radio Controlled Display Layout

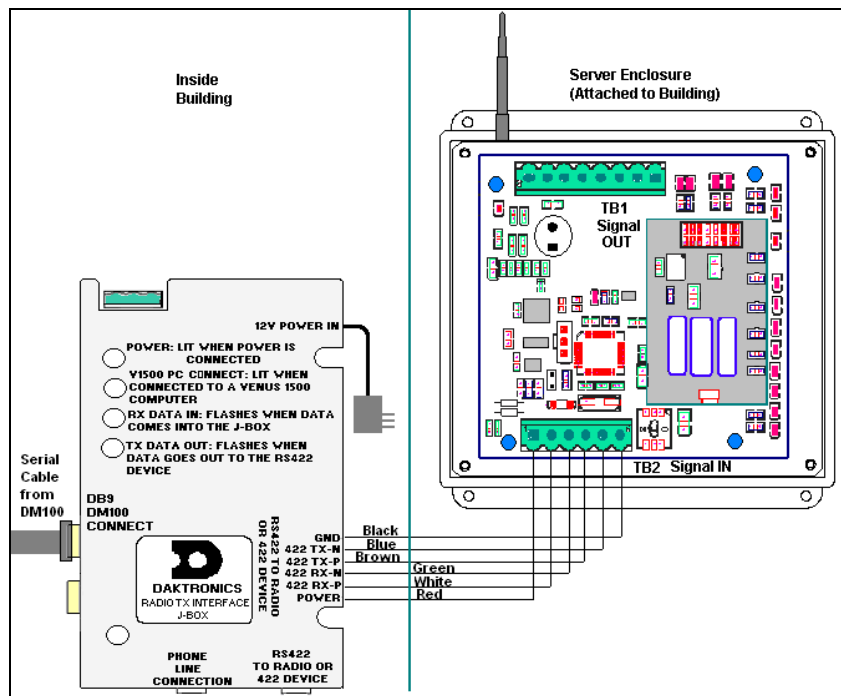


Figure 10: Direct Current Loop Connection

Connection from J-box to Server Radio Enclosure

J-Box		Cable Color	TB2 on Server	
Pin#	Function		Pin#	Function
Pin 1	Power	Red	Pin 1	Power
Pin 2	422 RX-P	White	Pin 2	422 TX-P
Pin 3	422 RX-N	Green	Pin 3	422 TX-N
Pin 4	422 TX-P	Brown	Pin 4	422 RX-P
Pin 5	422 TX-N	Blue	Pin 5	422 RX-N
Pin 6	GND	Black	Pin 6	GND

Notes:

1. The cable from the client radio to the display can be routed through conduit or the display pole to protect it from weather and vandalism. The cable is weather and sunlight resistant.
2. The Server and Client radios must have a clear line-of-sight path and not be more than 1500 feet apart.
3. A current-loop j-box is often mounted at the base of the display pole in case of problems with communication though the radio network.
4. For additional connection and operation information see **ED13894: DataMaster Radio Installation Manual**

Modem (Indirect)

Reference Drawings:

- Modem Installation; 4 col MASC Drvr. Enc.....**Drawing A-177039**
- Quick Install, DF-1020 Gas Price Displays.....**Drawing A-189768**
- System Riser Diagram, Modem Setup**Drawing A-200552**

A modem controlled display uses a DataMaster controller connected to a modem/j-box, to call a second modem in the Gas Price display. The DataMaster hand-held controller will receive its power from the j-box. A wall pack transformer powers the j-box. The display layout is shown in **Figure 11** and **Drawing A-200552**.

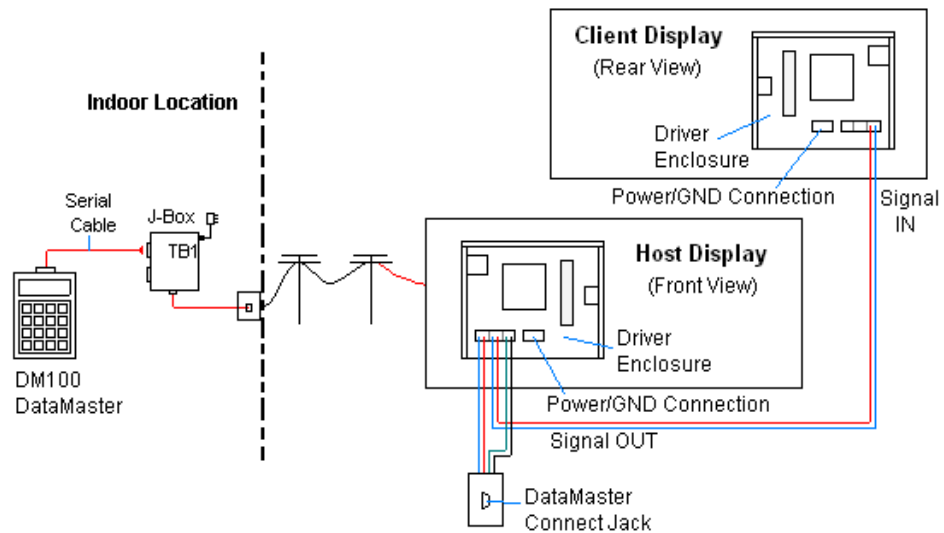


Figure 11: Modem Controlled Display Layout

1. Using the DB9M to DB9F serial cable, connect from the DataMaster controller to the modem/j-box, at the “DB9 Male, DataMaster 100 connect” jack.
2. Connect a phone line from a phone junction box to the modem/j-box jack labeled “Phone Line Connection”.
3. Plug the wall pack transformer into the modem/j-box and then into a 120V grounded outlet.
4. At the display, the local phone company must provide a dedicated phone line to the display and identify the color used for the “Tip” wire and which color is for the “Ring”.
5. The Tip and Ring phone wires will terminate to TB2 on the modem as shown in **Figure 12** and **Drawing A-177039**. If a phone cable is used, it will plug into J5.

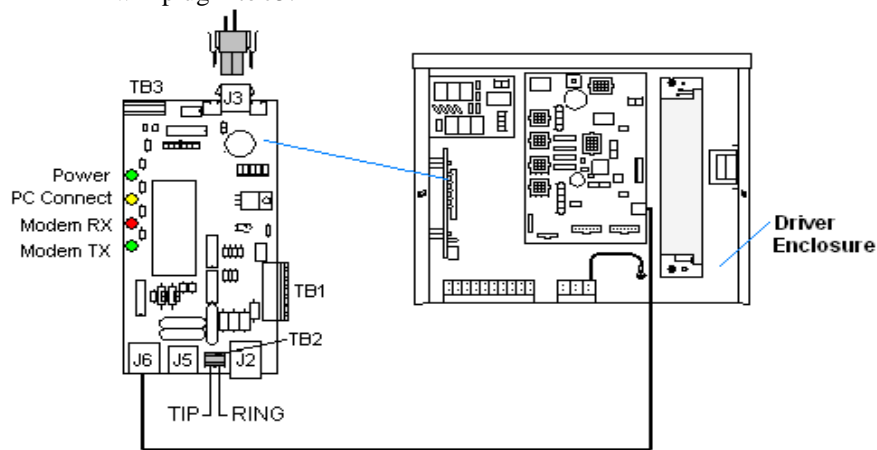


Figure 12: Phone line Connection to Display Modem

Notes:

1. A current-loop j-box is often mounted at the base of the display pole for communication in the case of problems with the phone line.
2. The phone line and display power **cannot** be routed though the same conduit.
3. For additional operation and connection information see **ED13953: DataMaster Modem Installation Manual**

Host/Client Definitions and Address Settings

Reference Drawings:

Host/Client and Master/Slave Definitions	Drawing A-168376
4 Column MASC LED Driver Specifications	Drawing A-166216
8 Column MASC LED Driver Specifications	Drawing A-167237
16 Col. MASC Driver Specifications	Drawing A-184475
Address settings, MASC drivers	Drawing A-227502

Host/Client Definitions

One driver at each sign installation is designated as the “host driver.” This driver receives its signal directly from the controller on the “Signal IN” terminals, and it is the only driver that is connected to the light sensor. The “Signal OUT” terminals are used to connect to “client drivers.” Refer to **Drawing A-168376** and **Figure 13** for an illustration of the host/client display connection.

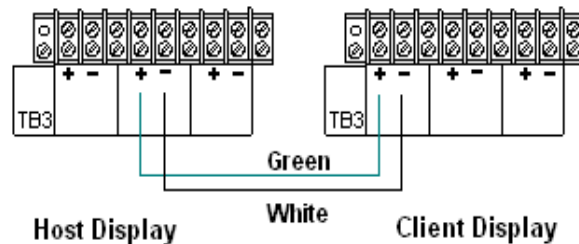


Figure 13: Host, Signal Out to Client, Signal In

Select the host driver by inserting the Protocol 4 plug into the 5-pin protocol jack (J20.) For protocol jack location, refer to **Drawings A-166216, A-167237 or A-184475** on your specific display driver.

The 12 V DC terminals connected to the host driver (see “Signal Connections” in **Figure 5**) run to the controller junction box. This output is used to power the DataMaster 100 controller.

All other drivers in the display system are client drivers. These drivers receive signal from the host driver on the Signal IN terminals and can re-drive this signal to other “client drivers” on the Signal OUT terminals.

Some multiple-module signs use “mirror displays.” These displays do not contain a driver and may use either the client or host digit outputs. Refer to **Drawing A-168376** for an illustration of the host/client driver and primary/mirror display setups. Some displays only use one driver for multiple product lines in one common cabinet. In this case, the signal to each line is already connected.

Address Settings

The address of each driver is set using an 8-position DIP-switch (S1), and the address is based on that driver’s position in the sign or display system. If a single-line sign is used, the address will typically be Address “01.” This means that switch 1 is turned “ON” and the remaining 7 switches are in the “OFF” position. This is the default address set when each display is shipped. In multiple-product displays, the address determines which line of information is shown on the driver’s digits. The switch is set using a binary address. Use the table and the examples for setting the address. **Drawing A-227502** shows how to set the address on the drivers used in DataTime and DataMaster products.

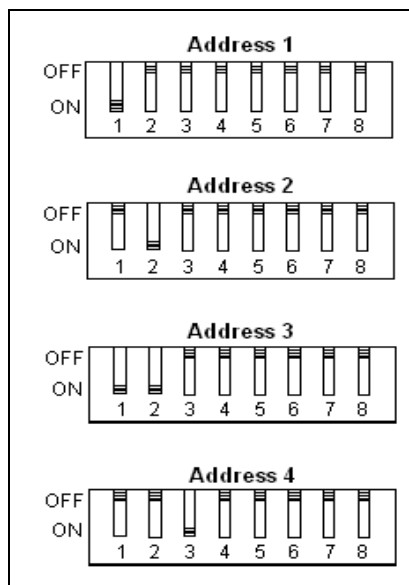


Figure 14: Common Address Settings

Binary Address Settings

Address	1	2	3	4	5	6	7	8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF

Note: Some older drivers set the address of each driver using an address plug (Daktronics part # 0A-1279-0122) in J19. The address, either using a switch or a plug, needs to be set for each driver.

Section 4: Maintenance and Troubleshooting



IMPORTANT NOTES:

1. **Disconnect power before doing any repair or maintenance work on the display!**
2. **Allow only qualified service personnel access to internal display electronics.**
3. **Disconnect power when not using the display.**

4.1 Cabinet Specifications

Reference Drawings:

Mechanical Specification Drawings **Refer to Appendix A**

Cabinets for the Daktronics outdoor LED digit displays are constructed of heavy-gauge aluminum. Exact dimensions and weights for each model are listed in the chart in **Section 2**. Hinged panels for servicing digits and indicators and for component access are detailed in each model's **Mechanical Specifications Drawing**.

4.2 Component Location and Access

Reference Drawings:

Electrical Specification Drawings **Refer to Appendix A**

Mechanical Specification Drawings **Refer to Appendix A**

Displays in the DataMaster Gas Price series are made up of two main components: the circuit boards that make up the digits and the driver enclosure.

Display Digits:

- A single circuit board makes up the digits for the 10", 13" and 18" digits
- The digits for 24", 36", 48" and 60" are made up of LED segments

Each host or primary display (the mirror does not contain a driver enclosure) contains an enclosure that includes the following devices:

- Display Driver
- 24V DC power supply
- 10V AC transformer
- Signal/Power Input Terminal Jack
- Signal Board (Surge board on direct displays or a modem)
- Light (photo) sensor

For the front-access modules in this series, all internal electronic components and digits can be reached by opening either the left hinged access door on the front of the display or removing digits.

For the 10", 13", 18", and 24" displays the hinged door swings outward when the two screws on the display face panel are removed, as shown in **Figure 15**. For the larger displays, the enclosure is reached by removing one of the digits from the face of the display. Since component placement varies slightly with each DataMaster model consult your model's **Electrical and Mechanical Specifications Drawings**.

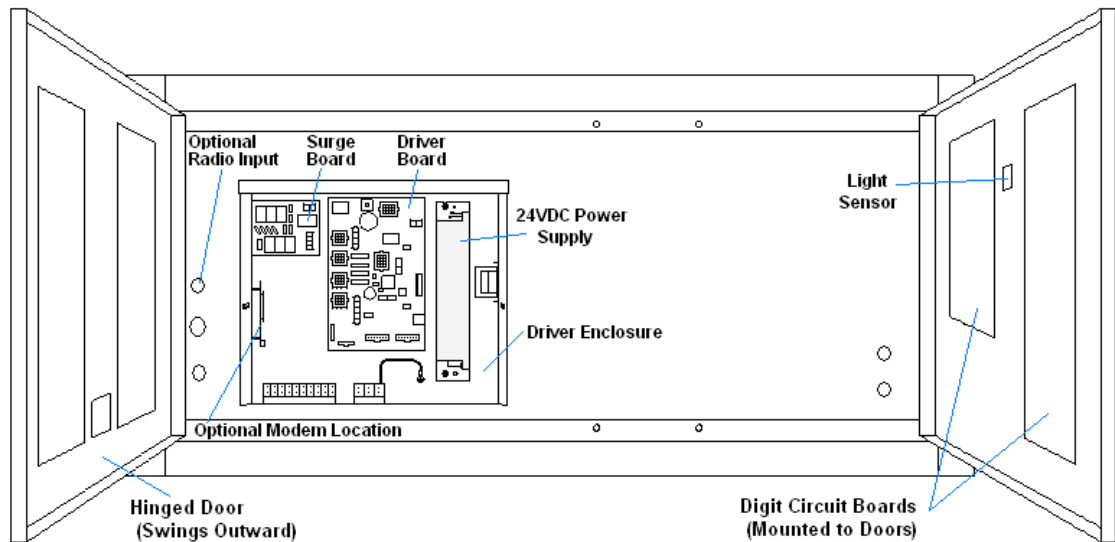


Figure 15: DataMaster Gas Price Display with Door Panels Open

Note: Disconnect power before servicing the display! Disconnect power, too, when the display is not in use. Prolonged power-on may shorten the life of some electronic components.

4.3 Service and Diagnostics

Replacing a Digit

The digit circuit board, the platform for the LEDs, is mounted to the back of the digit panel. Do not attempt to remove individual LEDs. In the case of a malfunctioning board, replace the entire digit panel (10", 13" and 18" displays). Refer to **Figure 16** for the digit assembly.

To remove a display digit, follow these steps:

1. Open the digit panel as described in the preceding section.
2. Disconnect the power/signal connector from the back of the digit. Release the connector by squeezing together the locking tabs as you pull the connector free.

3. The digits are secured to the inside of the panel with fixed machine screws, spacers, and push nuts. Remove the nuts and lift the digit off the standoff screws. (The push nuts can be removed in several ways, but Daktronics recommends using a $\frac{9}{32}$ " nut driver.)
4. Position a new digit over the screws and tighten the nuts.
5. Reconnect the power/signal connector. **Note:** This is a keyed connector it will attach in one way only. **Do not** attempt to force the connection!
6. Close and secure the digit panel and test the display.

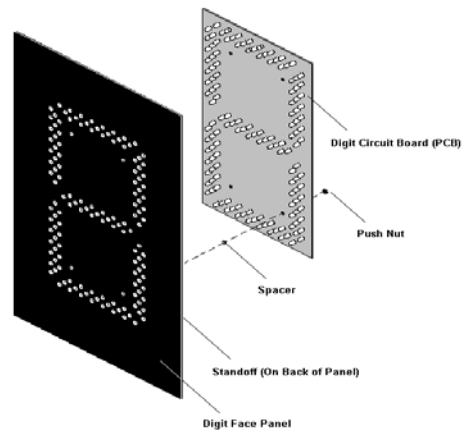


Figure 16: Digit Assembly

Replacing a Digit Segment

When a digit segment malfunctions, in most cases it is necessary to replace just that segment board. The larger digits, 24", 36", 48" and 60" as shown in **Figure 17**, are made up of LED segments. As with smaller digits, the digit segment circuit boards are mounted to the back of the digit panel. Do not attempt to remove individual LEDs.

To remove a digit segment, follow these steps:

1. Open the digit panel as described above.
2. Disconnect the 2-pin power/signal connector from the back of the individual segment. Release the connector by squeezing together the locking tabs as you pull the connector free.
3. The individual segments are secured to the inside of the panel with fixed machine screws, spacers, and push nuts. Remove the nuts and lift the segment off the standoff screws.
4. Position a new segment over the screws and tighten the nuts.

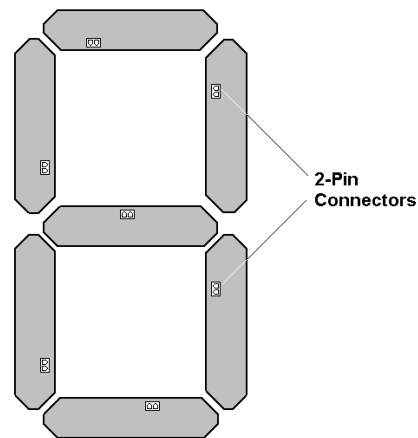


Figure 17: Segmented Digit Panel (Rear View)

5. Reconnect the power/signal connector. **Note:** This is a keyed connector it will attach in one way only. **Do not** attempt to force the connection!
6. Close and secure the digit panel and test the display.

Replace a malfunctioning colon, decimal, or indicator assembly in the same manner.

Segmentation and Digit Designation

Reference Drawing:

Segmentation, 7 Segment Bar Digit **Drawing A-38532**
 Electrical Specification Drawings **Refer to Appendix A**

In each digit, certain LEDs always go on and off together. No matter if they are made up of one circuit board, or separate boards, these groupings of LEDs are referred to as “segments”. **Drawing A-38532** illustrates digit segmentation. It also details which connector pin is wired to each digit segment and the wiring color code used throughout the display.

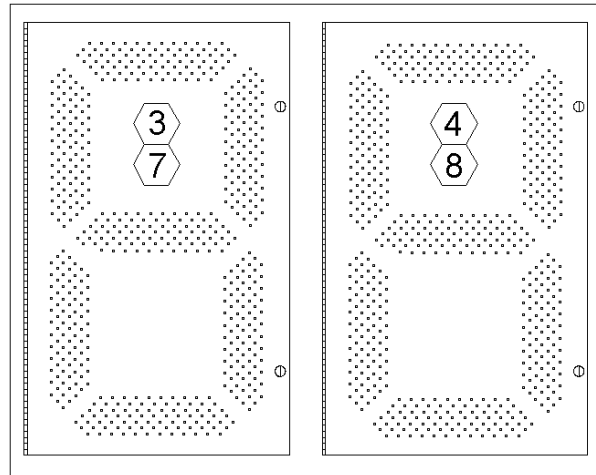


Figure 18: Digit Designation

The Electrical Specification

Drawings specify the driver connectors controlling the digits. Numbers displayed in hexagons in the upper half of each digit, as shown in **Figure 18**,

indicate which connector or connectors are wired to that digit. Larger digits, like the 36" digits shown in **Figure 18**, are each wired to two connectors. (Digits for a 48" and 60" displays use four connectors for each digit.)

Replacing an LED Driver

Reference Drawings:

4 Column MASC LED Driver Specifications..... **Drawing A-166216**
 8 Column MASC Driver Specifications..... **Drawing A-167237**
 16 Col. MASC Driver Specification..... **Drawing A-184475**
 Electrical Specification Drawings **Refer to Appendix A**
 Mechanical Specification Drawings..... **Refer to Appendix A**

Drivers are typically mounted inside the display enclosure and behind a digit, but the location and mounting varies by model. Refer to the **Electrical** and **Mechanical Specification Drawing** for the location of your driver. All displays in the DataTime and DataMaster series are front-accessible.

To replace the driver in the display enclosure:

1. Open the digit panel or display face panel as described in **Section 4.2**.
2. Remove the cover from the driver enclosure.
3. It is helpful to have the cables labeled as to which was removed from which connector.
4. Disconnect all connectors from the driver. Release each connector by squeezing together the locking tabs as you pull the connector free. **Note:** When reconnecting, remember that these are keyed connectors and will attach in one way only. **Do not** attempt to force the connections.
5. Remove the wing nuts securing the driver to the inside of the enclosure.
6. Carefully lift the driver from the display and place it on a clean, flat surface.
7. Follow the steps in reverse order to attach a new driver.

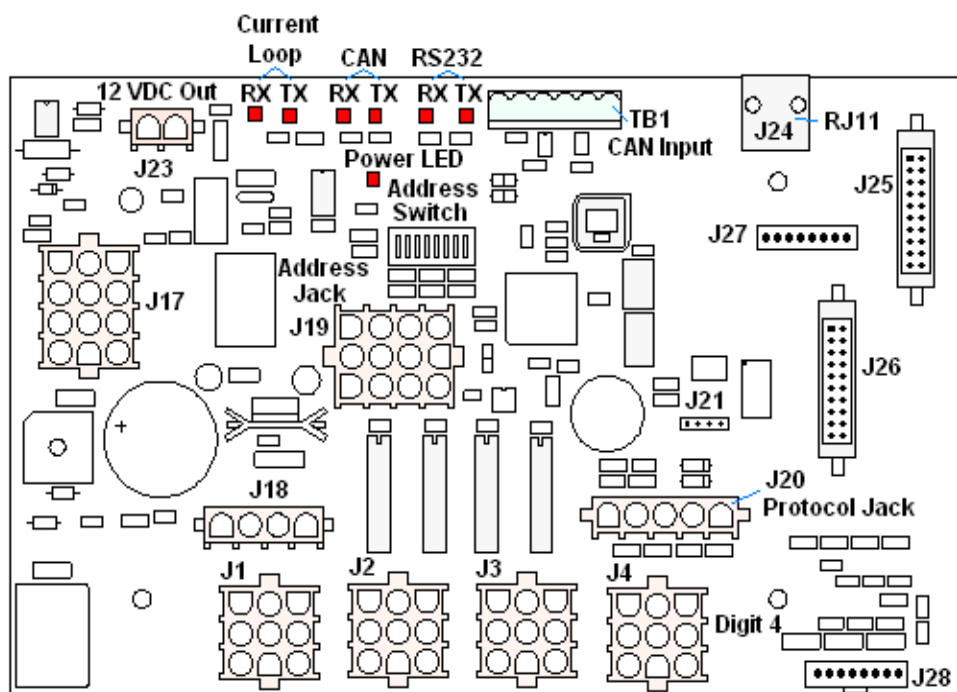


Figure 19: 4-column Digit Driver

DataMaster Gas Price displays may use 4-, 8-, or 16-column drivers, depending on the model and size of digits. Each 16-column driver is so named because it has 16 outputs to digits as compared to the 8- and 4-column drivers. **Figure 19** identifies the major functions for a 4-column driver. (Major functions are the same on 8- and 16-column drivers.)

In the display, the LED drivers perform the task of switching digits on and off. Refer to **Drawings A-166216, A-167237, and A-184475** for a complete listing of connector functions and wiring pin numbers for the correct driver for your display.

The following table lists the functions of the various jacks, including those that are not used in this application.

LED Driver Jack Functions

Jack No.	Function
J1-J4 (4-column) J1-J8 (8-column) J1-J16 (16-column)	Digits Output
J17	Signal/Power Input
J20	Protocol-5 Location
J23	12 VDC Power Out
J24	Modem
TB1	CAN (light sensor)
J19	Address Plug (older drivers only)
J18, J21, J22, J25, J26, J27, J28	Jacks not used in this application

The display line controlled by the driver is set with a DIP-switch that is set at the factory before shipment. (Note: Some older drivers use a 12-pin address plug inserted in J19). Most DataMaster displays ship with the “Line 1” address already set. Displays that have multiple products or lines in one common cabinet, the proper address is set during manufacturing.

Replacing a Signal Surge Board

Reference Drawings:

- Enclosure Driver, 4 Column Reference..... **Drawing A-183775**
- Electrical Specification Drawings**Refer to Appendix A**
- Mechanical Specification Drawings.....**Refer to Appendix A**

The surge board is mounted inside the display enclosure and behind a digit, but location and mounting varies by model. Refer to the **Electrical** and **Mechanical Specification Drawing** for the location of your surge board. All displays are front-accessible.

1. Open the digit panel or display face panel as described in **Section 4.2**.
2. Remove the cover from the driver enclosure.
3. Disconnect all connectors from the surge board. Release each connector by squeezing together the locking tabs as you pull the connector free.
Note: When reconnecting, remember that these are keyed connectors and will attach in one way only. **Do not** attempt to force the connections.
4. Remove the nuts securing the driver to the inside of the enclosure.
5. Carefully lift the surge board from the display and place it on a clean, flat surface.
6. Follow the steps in reverse order to attach a new driver.

In the display, the signal surge suppression board is an inline device used to filter the current loop data line. It suppresses surges down to a low voltage to protect the display's controller. Refer to **Drawing A-184918** for the location of the surge board inside the driver enclosure.

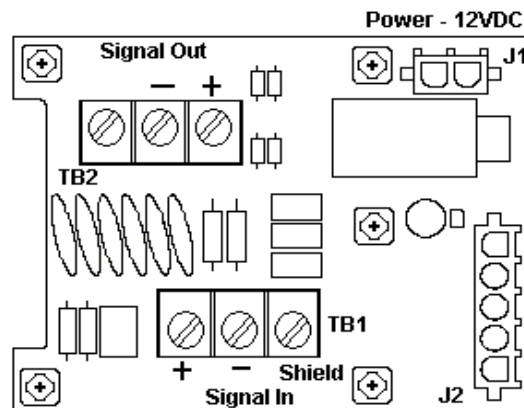


Figure 20: Signal Surge Suppression Board

The surge board is pre-wired before the display is shipped.

Note: The surge suppressor must be firmly connected to the driver enclosure, and the display must be properly grounded in order to be effective.

Replacing a Modem

Reference Drawings:

Modem Installation; 4 col MASC Driver Enc.....	A-177039
Electrical Specification Drawings.....	Refer to Appendix A
Mechanical Specification Drawings.....	Refer to Appendix A

If a modem is included with the display, it is mounted inside the display enclosure, behind a digit, and near the driver but the location and mounting varies by model. Refer to **Drawing A-177039** and the **Electrical** and **Mechanical Specification Drawings** for the location of the modem. All displays in this series are front-accessible.

1. Open the digit panel or display face panel as described in **Section 4.2**.
2. Remove the cover from the driver enclosure.
3. Disconnect all connectors from the modem. Release each connector by squeezing together the locking tabs as you pull the connector free. **Note:** When reconnecting, remember that these are keyed connectors and will attach in one way only. **Do not** attempt to force the connections.
4. Remove the nuts securing the modem to the inside of the enclosure.
5. Carefully lift the modem from the display and place it on a clean, flat surface.
6. Follow the steps in reverse order to attach a new modem.

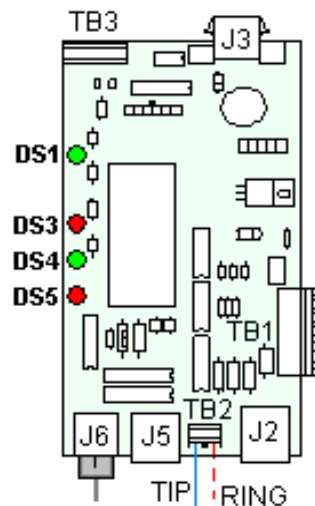


Figure 21: Modem Board

The modem has four LEDs.

1. The power LED (DS1) should remain lit while power is applied to the modem.
2. The modem RX (DS3) and TX (DS4) LEDs are normally off, but will flash when communicating.
3. The carrier detect LED (DS5) will light when the modem has established communication to another modem.

The modem board also has several input and output jacks:

1. TB2 is a phoenix connector to terminate the Tip and Ring wires.
2. J3 is the AC power input into the modem board from the transformer in the driver enclosure.
3. J6 is the RS232, RJ45 output jack from the modem board to the display driver.
4. J5 is an RJ11 jack for termination of a pre-terminated phone line (if needed).
5. J2, TB1, and TB3 are not used in this application.

4.4 Light Sensor Location

Reference Drawing:

Light Sensor Installation, G3 **Drawing A-183775**
 Mechanical Specification Drawings.....**Refer to Appendix A**

Displays in the DataMaster series use a light sensor to regulate sign dimming functions. Use **Drawing A-183775** and the following instructions to replace the light sensor in your DataMaster Gasoline Price display. If the sign or sign system has more than one display, the light sensor is found in the host/primary display only.

1. Open the digit panel or display face panel as described in **Section 4.2**.
2. Locate the $\frac{5}{8}$ " sensor plughole on the front panel of the display. The location of the plug varies by model. Refer to the **Mechanical Specifications Drawings** for model-specific information.
3. There are two 6-32 studs above and below the plughole. The internal light sensor assembly (Daktronics part #0A-1279-0203) is positioned on the studs, with the clear lens toward the front of the cabinet and the cable at the bottom. Secure the sensor with the provided plastic wing nuts.
4. Route the signal cable to the driver and insert the 6-postion plug into the mating jack on the driver, TB1.
5. Close the hinged access doors and replace the screws.

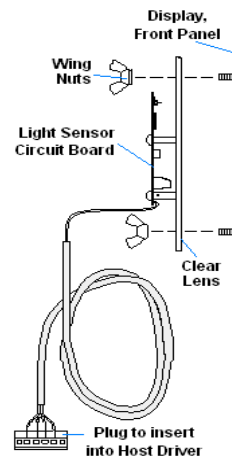


Figure 22: Internal Light Sensor

4.5 Troubleshooting

This section lists potential problems with the display, 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. (Refer to the appropriate manual for a list of potential problems with add-on or separately mounted message centers.)

Symptom/Condition	Possible Cause
Entire Display Fails to Work	<ul style="list-style-type: none"> • Check for proper line voltage at termination panel • Check connections from power supply to driver • Check power LED on driver
Cannot communicate with Display via Current Loop	<ul style="list-style-type: none"> • Check connections at J-box and display • Make sure DataMaster is receiving power • Check serial cable from DataMaster to J-box • Remove screws and plug DataMaster directly into the J-box
Cannot communicate with Display via Radio	<ul style="list-style-type: none"> • Check for power to signal converter connected to Server • Check wire connections from signal converter to Server • Check connections from Client to display • Make sure display and DataMaster have power
Cannot communicate with Display via Modem	<ul style="list-style-type: none"> • Make sure modem at display is connecting via phone line • Make sure display and DataMaster have power
Garbled display	<ul style="list-style-type: none"> • Internal driver logic malfunction • DataMaster malfunction
Digit will not light	<ul style="list-style-type: none"> • Black wire to digit broken • Poor contact at driver connection • Driver malfunction
Segment will not light	<ul style="list-style-type: none"> • Broken LED or connection • Broken wire between driver and digit • Poor contact at driver connector
Segment stays lit	<ul style="list-style-type: none"> • Driver shift register failure • Short circuit on digit
Data appears in the wrong place on the display, wrong data on a particular line of the display	<ul style="list-style-type: none"> • Incorrect address settings on drivers (Refer to "Power On Self-Test" in the following section, and consult tables to set correct addresses.)

Some DataMaster displays have their own built-in troubleshooting mechanism. Failures that may occur in the display driver are described using codes. In the event a sign malfunctions, a failure code registers by displaying an “E(x)” value on the first two digits of the display. “E” simply indicates an error, and the letter “x” represents the actual code number. Refer to the following table for a description of each failure code and for possible solutions.

Note: The LCD screen on the DataMaster 100 controller will not show the failure codes described in the table below. Failure codes will only be displayed on the DataMaster sign.

Failure Code	Description	Possible Solution
E1	Protocol Setting Error: There is an unsupported driver protocol setting.	Check the value set in the protocol plug of the driver (J20).
E2	Time Error: There is no valid time stored in the driver; it may be a failure of the real-time clock on board or other timekeeping device.	Set the time in the display using the Set Time menu option on the DataMaster 100 controller. (DataMaster Time & Temp displays only)
E3	Temp Error: There is no response from the temp sensor or light sensor, or general temp sensor failure.	Check the temp sensor location and verify all connections. Refer to the instruction sheet for the CAN Temperature/Light Sensor mounting, ED13364 . Note: The temp sensor takes approximately 10 seconds to initialize on power-up. The sign will display this error until initialization is complete.
E4	No Message Error: This code is shown when there are no messages downloaded to the display	Download a new message to the display using the < DISPLAY SEQUENCE > key on the DataMaster 100 controller.
E5	No Line Number Selected Error: The driver for this line has a Protocol 4 plug installed in J20, but all address switches are “OFF”. (Note: In some older drivers this happens when no address plug installed is in J19.)	Set the line number by setting the binary address on S1 (or installing the correct plug in J19). The Protocol 4 plug designates this driver as the “host.” If this is not the host, remove the Protocol 4 plug from J20.

Power On Self-Test:

A useful troubleshooting tool is the power on self-test the host driver performs every time it powers up:

- If the signal wiring between each controller is correct, the first two digits of each driver will display “Ad” momentarily, and the first digit will then flash three numbers indicating the decimal address that is set with the address plug in J19. (If a client driver displays “A <number>,” followed by “P <number>,” it is not receiving “signal in,” and is performing its own self-test.)
- Next, the first two digits of each line will display “Lx”, where “x” is the line number that the driver is set to control (set with address plug).
- Finally, each line will display “1234...” according to the column number of each of its digits. Every line should show “1” on the left-most digit, and all digits should be numbered consecutively from left to right. If this is not the case, either the wrong address plug is installed, or the driver or digit harness is connected incorrectly. If there is no address set (or address plug installed) in the host driver, the host driver will display “E5,” and all client drivers will continually cycle through the power on self-test.

4.6 Replacement Parts

Refer to the following table for Daktronics replacement parts.

Description	Daktronics Part No.
Driver, 4-column MASC, LED	0P-1192-0068
Driver, 8-column MASC, LED	0P-1192-0082
Driver, 16-column, MASC, LED	0P-1192-0086
Light sensor	P-1279-203
Protocol plug (Protocol 4)	0A-1279-0089
Power supply, 24 V DC, 150 W	A-1720
Transformer, Pri. 115V; Sec. 10 VCT @1.2A	T-1072
Transformer, wall pack (for DataMaster 100 and signal converter)	T-1118
Address #1 Plug	0A-1150-0122
Communication Boards and Accessories	
Signal surge suppression board	0P-1110-0011
Modem, RS232 coated, internal,	0P-1279-0003
J-box, signal converter, w/modem	0A-1279-0162

J-box, signal converter, radio	0A-1279-0161
RJ11 to RJ45, M-M, straight, 18" cable	0A-1137-0300
Server Radio, outdoor	0A-1146-0079
Client Radio, w/Quick Connect	0A-1146-0078
Cable, 6-cond., 18 AWG, j-box to Server Radio	W-1370
Transformer, wall pack (for j-box/signal converter)	T-1118
DataMaster 100 Controller Parts	
DataMaster 100 hand-held controller	0A-1196-0088
Junction box, outdoor, DB9-M	0A-1196-0093
Junction box, indoor, DB9-M, w/power jack	0A-1196-0099
DataMaster 100 outdoor wired installation kit	0A-1279-0087
DataMaster 100 indoor wired installation kit	0A-1279-0103
Transformer, wall pack (for DataMaster 100)	T-1118
Cable, serial, DB9 male to DB9 female	W-1267
DM100 Insert Time & Temp/Gas Price	0G-164998
Digits and Accessories	
Speed nut, M3 Kingnut black nylon, Push nut	HS-1453
Spacer, washer with steel backing	HC-1221
Digit, 10" 7-segment, red, pc board	0P-1192-0255
Digit, 10" 7-segment, amber, pc board	0P-1192-0256
Digit, 7" ⁹ / ₁₀ , red, pc board	0P-1192-0253
Digit, 7" ⁹ / ₁₀ , amber, pc board	0P-1192-0254
Decimal, 10" red, pc board (used in DF-1020-10)	0P-1192-0278
Decimal, 10" amber, pc board (used in DF-1020-10)	0P-1192-0279
Digit, 13" red, pc board	0P-1192-0200
Digit, 13" amber, pc board	0P-1192-0214
Digit, 13" 7-segment, red, w/faceplate	0A-1192-2223
Digit, 13" 7-segment, amber, w/faceplate	0A-1192-2224
Decimal, 13" red, pc board (used in DF-1020-13)	0P-1192-0238
Decimal, 13" amber, pc board (used in DF-1020-13)	0P-1192-0239
Digit, 13" and 18", ⁹ / ₁₀ , red, pc board	0P-1192-0234
Digit, 13" and 18", ⁹ / ₁₀ , amber, pc board	0P-1192-0235
Digit, 18" 7-segment, red, pc board	0P-1192-0202
Digit, 18" 7-segment, amber, pc board	0P-1192-0216

Digit, 18" 7-segment, red, w/ faceplate	0A-1192-2227
Digit, 18" 7-segment, amber, w/ faceplate	0A-1192-2228
Digit, 24" 7-segment, red, w/ faceplate	0A-1192-2231
Digit, 24" 7-segment, amber, w/ faceplate	0A-1192-2232
Digit segment, 24" red, vert	0P-1192-0204
Digit segment, 24" red horiz	0P-1192-0205
Digit segment, 24" amber, vert	0P-1192-0218
Digit segment, 24" amber horiz	0P-1192-0219
Digit, 24" ⁹ / ₁₀ red, w/faceplate	0A-1192-2359
Digit, 24" ⁹ / ₁₀ amber, w/faceplate	0A-1192-2360
Digit, 36" 7-segment, red, hinged	0A-1279-0195
Digit, 36" 7-segment, amber, hinged	0A-1279-0196
Digit segment, 36" red, vert	0P-1192-0208
Digit segment, 36" red horiz	0P-1192-0209
Digit segment, 36" amber, vert	0P-1192-0222
Digit segment, 36" amber horiz	0P-1192-0223
Digit, 48" 7-segment, red, hinged	0A-1279-0181
Digit, 48" 7-segment, amber, hinged	0A-1279-0182
Digit segment, 48" red, vert	0P-1192-0212
Digit segment, 48" red horiz	0P-1192-0213
Digit segment, 48" amber, vert	0P-1192-0226
Digit segment, 48" amber horiz	0P-1192-0227
Digit segment, 60" red, vert	0P-1192-0281
Digit segment, 60" red horiz	0P-1192-0280
Digit segment, 60" amber, vert	0P-1192-0283
Digit segment, 60" amber horiz	0P-1192-0282
Digit, 24", 36", 48", 60" ⁹ / ₁₀ red, pc board	0P-1192-0232
Digit, 24", 36", 48", 60" ⁹ / ₁₀ amber, pc board	0P-1192-0233
Indicator, 2" red, pc board (used in 18" and 24" displays)	0P-1192-0228
Indicator, 2" amber, pc board (used in 18" and 24" displays)	0P-1192-0229
Indicator, 4" red, pc board (used in 36" and 48" displays)	0P-1192-0244
Indicator, 4" amber, pc board (used in 36" and 48" displays)	0P-1192-0245
Indicator, 4" red w/ face plate (used in 36" and 48" displays)	0A-1192-2434
Indicator, 4" amber w/ face plate (used in 36" and 48" displays)	0A-1192-2435

Ballast 1-2 lamps (4-12 feet)	A-1368
Ballast 2, 3, 4 lamps (6-12 feet)	A-1369
Ballast 2, 3, 4 lamps (12-24 feet)	A-1370
Lamps 2'	DS-1034
Lamps 3'	DS-1035
Lamps 3'6"	DS-1501
Lamps 4'	DS-1036
Lamps 5'	DS-1049
Lamps 5'4"	DS-1053
Lamps 6'	DS-1037
Lamps 7'	DS-1038
Lamps 8'	DS-1048
Lamps 10'	DS-1213

4.7 Daktronics Exchange and Repair and Return Programs

To serve customers' repair and maintenance needs, Daktronics offers both an Exchange Program and a Repair and Return Program. Daktronics unique Exchange Program is a quick, economical service for replacing key components in need of repair. If a component fails, Daktronics sends the customer a replacement, and the customer, in turn, sends the failed component to Daktronics. This not only saves money but also decreases display downtime. Daktronics provides these plans to ensure users get the most from their Daktronics products, and it offers the service to qualified customers who follow the program guidelines explained below. Please call the Help Desk – 877-605-1113 – if you have questions regarding the Exchange Program or any other Daktronics service.

When you call the Daktronics Help Desk, a trained service technician will work with you to solve the equipment problem. You will work together to diagnose the problem and determine which exchange replacement part to ship. If, after you make the exchange, the equipment still causes problems, please contact our Help Desk immediately.

If the replacement part fixes the problem, package the defective part in the same box and wrapping in which the replacement part arrived, fill out and attach the enclosed UPS shipping document, and **RETURN THE PART TO DAKTRONICS**. In most circumstances, you will be invoiced for the replacement part at the time it is shipped. This bill is due when you receive it.

Daktronics expects immediate return of an exchange part if it does not solve the problem. The company also reserves the right to refuse equipment that has been damaged due to acts of nature or causes other than normal wear and tear.

If the defective equipment is not shipped to Daktronics within 30 working days from the invoice date, it is assumed you are purchasing the replacement part, and you will be invoiced for it. This second invoice represents the difference between the exchange price and the full purchase price of the equipment. The balance is due when you receive the second invoice. If you return the exchange equipment after 30

working days from the invoice date, you will be credited for the amount on the second invoice, minus a restocking fee.

To avoid a restocking charge, please return the defective equipment within 30 days from the invoice date.

Daktronics also offers a Repair and Return program for items not subject to exchange.

Return Materials Authorization: To return parts for service, contact your local representative prior to shipment to acquire a Return Material Authorization (RMA) number. If you have no local representative, call the Daktronics Help Desk for the RMA. This expedites repair of your component when it arrives at Daktronics.

Packaging for Return: Package and pad the item well so that it will not be damaged in shipment. Electronic components such as printed circuit boards should be installed in an enclosure or placed in an antistatic bag before boxing. Please enclose your name, address, phone number and a clear description of symptoms.

This is how to reach us:

Mail: Customer Service
Daktronics, Inc.
PO Box 5128
331 32nd Ave
Brookings SD 57006

Phone: Daktronics Help Desk: 877-605-1113 (toll free)
or 605-697-4034

Fax: 605-697-4444

E-mail: helpdesk@daktronics.com

Section 5: Gas Price Display Operation

These sections describe the DataMaster 100 controller, and how it is used to set the information on the Gas Price Display.

5.1 DataMaster 100 Overview

The DataMaster 100 Series controller, shown in **Figure 23**, is a hand-held controller designed to operate Daktronics LED DataMaster displays. The console's liquid crystal display (LCD) guides the user through the operation of the system.

The DataMaster 100, identified by the series number DM-100, can be configured to display gasoline price, motel rates, time and temperature data, etc. The displays in the LED DataMaster Series will use a junction box at the base of the sign, an indoor wire system, modem or radio. Refer to **Section 3** for information on possible connection procedures.

For details on configuring the DataMaster to operate the display, refer to **Section 5.3: Gas Price Display Operation**.



Figure 23: DataMaster 100

5.2 DataMaster™ Insert and Code

Reference Drawing:

Insert, LL-2551 Price/T&T Display **Drawing A-164998**

The DataMaster 100 uses a keypad insert to program gas price information into Daktronics LED DataMaster Gas Price displays.

Figure 24 illustrates the DM-100 insert used to control the displays. For more details on the insert, refer to the DataMaster 100 insert drawing, **Drawing A-164998**.

If an insert is lost or damaged, a copy of the insert drawing located in **Appendix A** can be used until a replacement is ordered.

To start the controller and use the insert, read the next section carefully to fully understand the operation instructions.

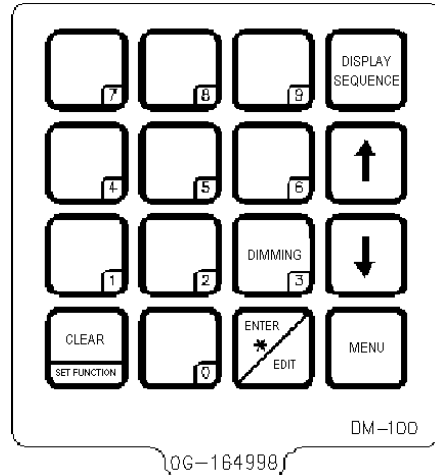


Figure 24: DataMaster 100 Insert LL-2551

5.3 Gas Price Display Operation

The DataMaster 100 controller can be configured to program gas price information displayed on the LED DataMaster Gas Price sign. The instructions provided in this section discuss the functions the operator uses to control the Gas Price display. In the unlikely event that the Gas Price Display malfunctions, refer to **Appendix B** for the **Frequently Asked Questions** section for this display.

Connect to the display with the DataMaster. Often when using either a modem or radio an outdoor j-box will also be connected for use of the other means of communication fails.

Note: There is more than one way to get certain LCD screens on the DM100. One way is by using the menu and then the arrows to reach the desired programming location. The other way is to set the first gas price and then continue to enter through the additional screens.

Gas Price Display Startup

To operate the DataMaster Gas Price displays, the DataMaster 100 must first be programmed to the gas price function. Use the <**CLEAR/SET FUNCTION**> key on startup. The following text will be displayed on the LCD during startup:




Daktronics, Inc.
Brookings, SD

DataMaster 100
ED-13374 V3.X

The controller will then list the “Current Function,” if it is Gas Price you can continue, otherwise at the next frame: “Current Function? Press Set Function” you need to press <Clear/Set Function> and use the<↑↓> to select Gas Price.

Note: Press the <Clear/Set Function> key quickly to enter the function mode. If you miss this step, unplug the power to the DataMaster controller and start again.

Use the following table as a guide to startup procedures.

LCD Screen	Action
	<p>Power is provided to the DM100 through the serial cable or through the wall pack transformer, either directly or by way of the j-box/signal converter.</p> <p>This display appears briefly.</p>
	<p>This message appears next on the screen.</p> <p>If “GAS PRICE” was shown on the bottom line of the LCD during startup, do nothing. The controller will automatically default to previous Gas Price settings. (The controller will remember the last function used, so you should only have to do this with a new controller or switching between DataMaster displays.)</p> <p>If a function other than “GAS PRICE” was shown on the bottom line of the LCD during startup, press the <SET FUNCTION> key while the second LCD prompt is displayed.</p> <p>You only have 1 or 2 seconds to push it. If you miss it, unplug the power and try again.</p>
	<p>Press the arrow up or down keys<↑↓> until the gas price option is shown. Press the <ENTER> key to accept.</p>

Note: The actual Gas Price values will not be displayed on the DataMaster 100 LCD screen because these values are kept in the display itself.

Menu Items

Pressing the <MENU> key accesses the following settings:


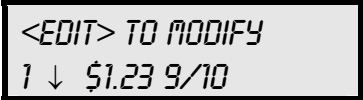
1. Price Line 1
2. Price Line 2
3. Price Line 3
4. Price Line 4
5. Price Line 5
6. LED Test
7. Modem Settings
8. Display Status
9. Set Time
10. POS Settings

Use Menu items 1-5 to edit the price on each line of the display. Lines are typically numbered top to bottom with 1 being the top of the display.

For more information about the Modem Settings submenu, refer to **ED13953: DataMaster Modem Installation Manual**. The following sections also provide information about the Display Status or the Set Time submenus. **Section 5.4** explains about the Point of Sale interface option.

Gas Price Controller Operation

The Gas Price Controller LCD display will default to showing the current display settings on power up. The following text will be shown on the LCD.

LCD Screen	Action
	The display will toggle between these two screens.
	Press the up or down arrow keys <↑↓> to scroll through the current setting for any of the lines on the display. Press the <ENTER/EDIT> key to modify any of the line settings.

Modifying Price Line Settings

The gas price can be modified either by pressing the <EDIT> key during operation or using the <MENU> key. Refer to the following key to identify the item to be edited.

L = Current line number to be edited

D.CC = Current dollars and cents value to edit

T = Current tenths of cent value to edit

LCD Screen	Action
<p>The LCD screen displays the text "EDIT LINE L" on the top line and "\$D.CC T/10 ↓" on the bottom line. The text is in a monospaced font.</p>	<p>Press any of the number keys to edit the price value for this line. Press the down arrow key <↓> to modify the value of the 1/10-cent data for this line (see note below).</p> <p>Press <ENTER> to accept the new value or press <CLEAR> to abort the changes.</p> <p>Note: The flashing asterisk on the LCD shows the current data being edited.</p> <p>Many displays do not have a changeable 1/10-cent digit. Changing the tenths-cent value from 9 on these digits will make the digit appear incorrect.</p>

Edit Price Line 1-5


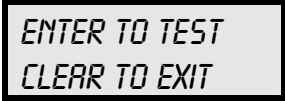
After pressing the <MENU> key, the following LCD prompt is displayed:

LCD Screen	Action
<p>The LCD screen displays the text "PRICE LINE 1" on the top line and "ENTER TO EDIT" on the bottom line. The text is in a monospaced font.</p>	<p>Pressing the <MENU> key displays this message.</p> <p>Press <ENTER> to edit the current item shown on the LCD.</p> <p>Press the up or down arrow keys to move to the previous or next item in the list.</p> <p>Press the <MENU> key a second time or press the <CLEAR> key (press twice if editing) to exit the menu.</p>

Use Menu items 1-5 to edit the price on each line of the display. (Lines are typically numbered top to bottom with 1 being the top of the display.)

LED Test

Select menu item 6, LED Test, to test the LED digits on the display.

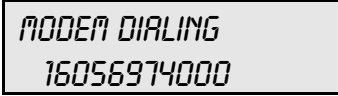
LCD Screen	Action
	Press the <ENTER> key to cycle the display digits between all LEDs on and all LEDs off.
	Press <ENTER> to send the test command to the sign. Press <CLEAR> to exit the test mode

Modem Settings

A DM-100 controller can be connected to a modem, allowing for control of a DataMaster display remotely via a telephone network.

The first time a modem system is used, modem settings (such as Dial-Out Number) must be programmed into the DM-100.

When a modem is detected and all configurations have been set, pressing the <DISPLAY SEQUENCE> key will show the following:



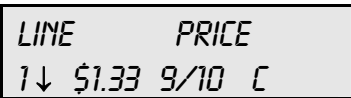
If more than one modem dial number is configured, the DM-100 will ask which displays to update before dialing.

The modem will dial the number shown on the bottom line of the LCD. When complete, the modem will send the sequence to the display and wait for a response. The result will be shown on the LCD.

To cancel connection to the display, press the <CLEAR> key twice.

If the modem is not able to connect to the display, a modem error message will be displayed.

When the modem is connected to the display, a "C" character will flash on the lower right corner of the LCD to show that a modem connection has been established.



The modem will automatically disconnect from the display after a period of inactivity that is set by the Disconnect Time set function in the menu. When less than 5 seconds of modem connection remain, the LCD will count down the time remaining, giving the user a chance to retain modem connection to the display.



The modem will disconnect from the display in 5 seconds. Press <CLEAR> to cancel and remain connected to the display.

Display Sequence

Once connected to the display, press <DISPLAY SEQUENCE> to display the new sequence on the display. This button will also allow for a preview of the new sequence on the LCD.

Set Time

Use the Set Time menu to set the time on the display.


LCD Screen	Action
An LCD screen with a black border displaying "SET TIME-12HR" on the top line and "HH:MM AM ↓" on the bottom line.	<p>HH – Current hours value MM – Current minutes value AM – Current AM/PM setting (not shown when 24-hour time is selected)</p> <p>Using the number keys, enter the Time in the 12-hour (or 24-hour) format. Press the down arrow key <↓> to modify the AM/PM setting.</p> <p>Note: The flashing asterisk shows the current data being edited.</p> <p>To save changes, press the <ENTER> key when finished editing.</p> <p>Press the <CLEAR> key to cancel changes</p>

After setting the time you will need to set the date. If the date is already correct, enter through the date and press <ENTER> to send the time to the display.


Dimming

The dimming level of the Gas Price display can be adjusted in two ways. A light sensor, mounted in the display face, can detect the level of ambient light at the display location and dim the sign's LEDs accordingly. This function is known as automatic dimming. When the manual dimming function is selected, the LEDs remain at the same level of brightness regardless of the level of light detected at the display.

To select either of these dimming functions, or to enter the **Blank Sign** function, press <DIMMING>. The current setting is shown on the bottom line of the LCD.

LCD Screen	Action
 <p>The LCD screen displays the word "DIMMING" on the top line and "AUTOMATIC" with a downward arrow on the bottom line.</p>	<p>Press the down arrow key <↓> to toggle through dim settings:</p> <p>Automatic – The display automatically dims based on the light detected at the display.</p> <p>Manual – The display dimming level is set manually. Once set, this value remains regardless of the level of light detected at the display.</p> <p>Blank Sign – Will blank the display of all items.</p>

If AUTOMATIC dimming is selected, the following LCD prompt will be shown:

LCD Screen	Action
 <p>The LCD screen displays "SET AUTO DIMMING" on the top line and "MAX INTENSITY?" on the bottom line.</p>	<p>Press the <ENTER/EDIT> key to edit the auto dimming max intensity. This is the maximum intensity that the display will use in full-bright modes (during daylight hours.)</p> <p>Press <CLEAR> to keep the current auto dimming maximum setting</p>

The following LCD prompt is shown for either Manual or Automatic dimming selections:

LCD Screen	Action
<div data-bbox="456 457 803 556" style="border: 1px solid black; padding: 5px; text-align: center;"> <i>INTENSITY XX↓↑</i> <i>ENTER TO SET</i> </div> <p>XX – Current intensity (1-16) Max intensity – 16 (Default is 16)</p>	<p>Press the up or down arrow key <↑↓> to modify the current intensity of the display</p> <p>Press <ENTER> to accept this intensity. If the manual-dimming mode is selected, this will be the new intensity for the display all the time. However, if the automatic dimming mode is selected, the display will dim between the dim mode and the maximum intensity level you have set.</p>

Radio Settings

The DataMaster controller is most often connected to an external radio device. When the DM-100 senses that an external device is connected, the following LCD prompt is shown at startup:

LCD Screen	Action
<div data-bbox="443 1129 800 1228" style="border: 1px solid black; padding: 5px; text-align: center;"> <i>SEARCHING FOR</i> <i>CONNECTED DEVICE</i> </div>	<p>(None necessary)</p>

This LCD display is shown for several seconds while the DM-100 attempts to configure the connected device.

Once the device is found and initialized, the LCD shows which device is connected:

LCD Screen	Action
<div data-bbox="415 1591 743 1690" style="border: 1px solid black; padding: 5px; text-align: center;"> <i>RADIO FOUND</i> <i>& INITIALIZED</i> </div>	<p>This message appears on the LCD when a radio is connected.</p>

For more information on the radio controlled display refer to **ED13894: DataMaster Radio Installation Manual**.

5.4 POS Installation and Interface

Reference Drawings:

System Riser Diagram; Point of Sale Configuration ... **Drawing A-200195**

A Point of Sale (POS) interface option is available with DataMaster LED Gasoline Price Displays. Displays with this option automatically update when product prices are changed in the POS. Displays with the POS interface option will be supplied with a POS Interface Kit (0A-1279-0400 for Gilbarco G-Site).

BEFORE YOU START:

1. Ensure that the POS system has a price sign output port, and refer to the POS manuals to enable and/or configure the port.
2. Locate the parts in the list below.

Hardware Installation:

1. Locate the following parts:
 - a) POS Interface Kit containing:
 - DataMaster 100 w/POS option (0A-1196-0133)
 - Wall mounting bracket for DM-100 (0M-200082)
 - POS Interface Cable
 - For Gilbarco G-Site POS: RJ45 to DB9 cable (0A-1279-0402)
 - POS riser diagram (**Drawing A-200195**)
 - b) 10' cable, DB9 to DB9 (W-1267)
 - c) Wall pack transformer (T-1118).
 - d) Indoor junction box (0A-1196-0099) for direct wired installations

OR...

Radio Interface junction box (0A-1279-0161) for wireless installations.
2. The wall mount bracket (0M-200082) provides convenient storage for the DM-100 controller. If using the wall mount bracket for the DM-100, ensure that there is sufficient clearance above the bracket to allow the DM-100 to be removed from the bracket with both cables attached. Also ensure that the POS interface cable will reach from the DM-100 location to the price sign output of the POS. Fasten the wall mount bracket if desired. The DM-100 can be permanently attached to the wall mounting bracket by removing the two screws in the bottom edge of the DM-100, sliding the DM-100 into the wall mount bracket, and reinstalling the screws through the slots in the bottom bracket flange.
3. Mount the junction box (c. or d. above). Ensure that the DB9 to DB9 cable (W-1267) will reach from the DM-100 to the junction box.
4. Complete junction box to sign, or junction box to radio wiring as shown on the riser diagram (drawing 200195).
5. Attach the POS interface cable to the POS price sign port. Coil any excess cable and cable tie it out of the way.
6. Attach the DB9 to DB9 cable (W-1267) to the junction box as shown on the riser diagram. Coil any excess cable and cable tie it out of the way.

7. Plug the transformer (T-1118) into an outlet, and connect the output to the power jack on the J-box.
8. Ensure that the DM-100 is up and running. Send a price change to the sign to verify communications between the sign and the DM-100.

Configuring the DM100 for Gilbarco G-Site Interface

BEFORE YOU START:

The DM-100 function must be set to “GAS PRICE”. The current function of the DM-100 is displayed during power up. To change to function, cycle power to the DM-100, and press the <SET FUNCTION> key when prompted.

1. Press the <Menu> key and use the <↑> and <↓> keys to scroll to the “POS SETTINGS” menu item.



A rectangular box with a black border containing the text "POS SETTINGS" on the top line and "ENT TO MODIFY ↓↑" on the bottom line.

Press <ENTER>.

2. Select the POS type by using the <↑> and <↓> keys to scroll to “GILBARCO GSITE”.



A rectangular box with a black border containing the text "POS INTERFACE" on the top line and "GILBARCO GSITE ↓↑" on the bottom line.

Press <ENTER>.

3. Each price in the Gilbarco G-Site is uniquely identified by ‘price category’. Each price category corresponds to the price assigned to a particular grade/service level/price level. Use the menu shown below to configure which price category you would like displayed on each line of the display.



A rectangular box with a black border containing the text "PRICE CATEGORY" on the top line and "LINE 1: 1 ↓↑" on the bottom line.

Use the <↑> and <↓> keys to select a price category to be displayed on line 1 of the sign. Press <ENTER> to accept the setting. When the price category displayed says <NONE>, pressing <ENTER> will cause the price sign to ignore POS data for this line. (This may be useful for configuring some lines of a price sign to receive manual price changes only).

Select a price category to be displayed on each line of the sign, and press <MENU>, or <ESC/CLEAR> when finished. The POS interface configuration is complete.

Changing Prices:

Each display line for which a price category is configured will automatically update when the price is changed in the POS system. Attempting to manually edit prices that are configured for POS control will cause the following screen to appear:



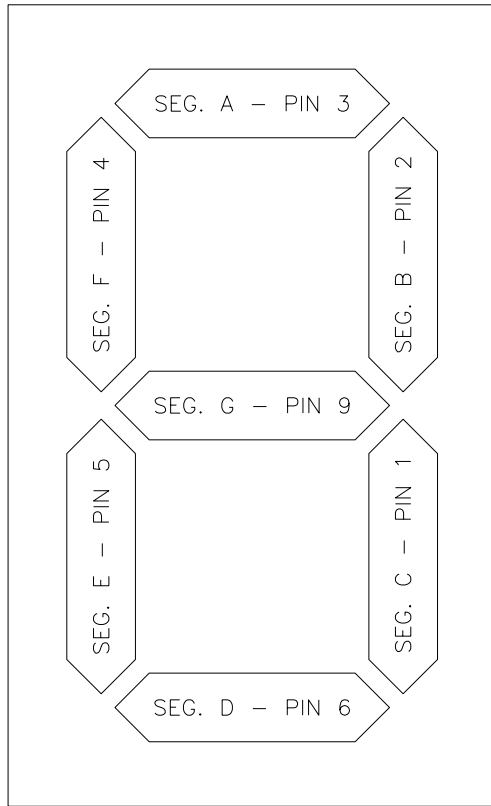
*THIS LINE POS
CTRLD. OVERRIDE?*

Press <ENTER> to manually edit the price, or <ESC/CLEAR> to cancel.

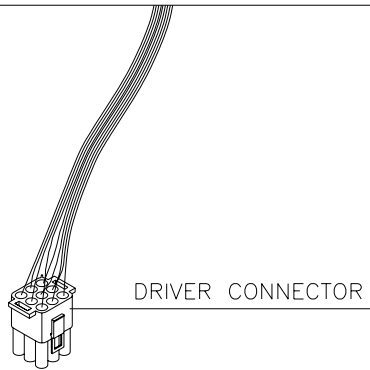
Appendix A: Reference Drawings

Drawings in this manual are referenced by their last set of digits and the letter preceding them. Drawings in this appendix are listed in alphanumeric order.

Segmentation, 7 Segment Bar Digit.....	Drawing A-38532
Riser Diagram; Outdoor Wire Control.....	Drawing A-164988
Insert, 0G-164988 Price/ T&T Display.....	Drawing A-164998
Schematic; Multipurpose LED Drvr	Drawing A-165028
4 Column MASC LED Driver Specifications.....	Drawing A-166216
8 Column MASC LED Driver Specifications.....	Drawing A-167237
Host/Client and Master/Slave Definitions.....	Drawing A-168376
Riser Diagram, Indoor Wire Control	Drawing A-175342
Modem Installation; 4 col MASC Drvr. Enc.	Drawing A-177039
Schematic; Gen III Outdoor LED, 8 Column Driver	Drawing A-177935
Schematic; 16 Col Multipurpose LED Drvr	Drawing A-179599
Mechanical Specifications, DF-1020-48, G3.....	Drawing A-181672
Electrical Specs, DF-1020-48, G3	Drawing A-181673
Light Sensor Installation	Drawing A-183775
16 Col. MASC Driver Specification	Drawing A-184475
Enclosed Driver, 4 Column Reference.....	Drawing A-184918
Quick Install, DF-1020 Gas Price Displays	Drawing A-189768
System Riser Diagram, Server/Client Setup	Drawing A-199834
System Riser Diagram; Point of Sale Configuration.....	Drawing A-200195
System Riser Diagram, Modem Setup	Drawing A-200552
Shop Drawing, DF-1024-18.....	Drawing A-215188
Shop Drawing, DF-1221	Drawing A-226796
Address settings, MASC drivers	Drawing A-227502
Shop Drawing, DF-1024-24.....	Drawing A-230936
Shop Drawing, DF-1024-36.....	Drawing A-230946
Shop Drawing, DF-1026-13.....	Drawing A-232349
Shop Drawing, DF-1024-60.....	Drawing A-232509
Shop Drawing, DF-1024-10.....	Drawing A-233990
Shop Drawing, DF-1024-13.....	Drawing A-234222
Shop Drawing, DF-1026-18.....	Drawing A-235302
Shop Drawing, DF-1024-48.....	Drawing A-236905
Shop Drawing, DF-1222-24.....	Drawing B-227099

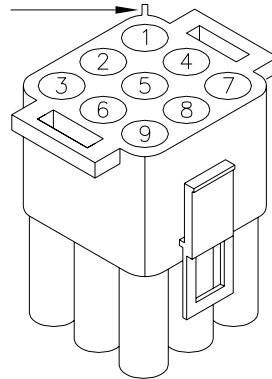


7 SEGMENT BAR DIGIT
FRONT VIEW



COLOR CODE		
PIN NO.	WIRE COLOR	DRIVER SEGMENT
1	ORN	C
2	RED	B
3	BRN	A
4	BLU	F
5	PNK	E
6	TAN	D
7	BLK	COM.
8	GRY	H
9	VIO	G

CONNECTOR PIN NUMBERING
NOTE SPLINE NEAR NO. 1



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

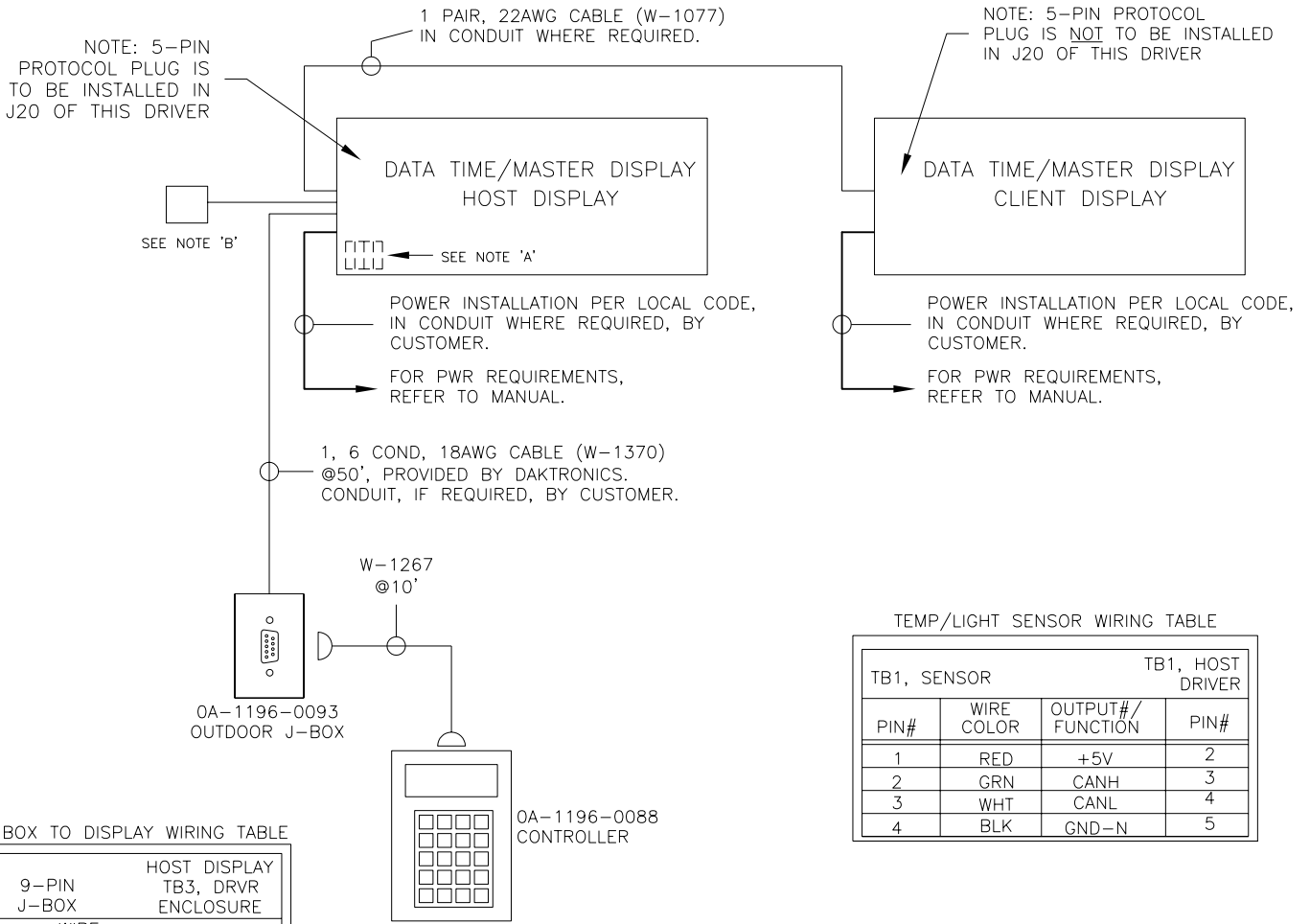
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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASKETBALL
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT
DES. BY: _____ DRAWN BY: HEIDERSCHIEDT DATE: 5 JUN 89
REVISION 02 APPR. BY: AVB SCALE: 1=4
1009-R04A-38532

REV.	DATE	DESCRIPTION	BY	APPR.
2	30 APR 97	ADDED SEGMENT DESIGNATIONS TO DIGIT FIGURE.	AVB	AVB
1	2 JAN 92	CHANGED FROM B-SIZE TO A-SIZE DWG.	C FICK	

WIRE CONTROL AT BASE OF SIGN



J-BOX TO DISPLAY WIRING TABLE

9-PIN J-BOX		HOST DISPLAY TB3, DRVR ENCLOSURE	
PIN#	WIRE COLOR	FUNCTION	PIN#
1	RED	12VDC-P	7
5	BLK	GND-N	8
6	GRN	SIG. IN+	1
5	WHT	SIG. IN-	2
8	BRN	SIG. OUT+	4
9	BLU	SIG. OUT-	5

TEMP/LIGHT SENSOR WIRING TABLE

TB1, SENSOR			TB1, HOST DRIVER	
PIN#	WIRE COLOR	OUTPUT#/ FUNCTION	PIN#	
1	RED	+5V	2	
2	GRN	CANH	3	
3	WHT	CANL	4	
4	BLK	GND-N	5	

DISPLAY TO DISPLAY WIRING TABLE

HOST DISPLAY TB3, DRIVER ENCLOSURE		CLIENT DISPLAY TB3, DRIVER ENCLOSURE		
PIN#	WIRE COLOR	FUNCTION	PIN#	
4	GRN	SIGNAL-P	1	
5	WHT	SIGNAL-N	2	

NOTE 'A':
0A-1279-0100, INTERNAL PHOTO CELL KIT INCLUDED ON DATA TIME
MODELS. REFER TO MANUAL FOR DETAILS.

NOTE 'B':
0A-1151-0005 EXTERNAL TEMP/LIGHT SENSOR /W 8' OF 2 PAIR,
22 AWG CABLE (W-1234), INCLUDED ON DATA MASTER MODELS.
INSTALLED ONSITE BY OTHERS.

INSTALL "PROTOCOL 4" PLUG IN THE
DRIVER IN THE HOST DISPLAY ONLY.

REFER TO DRAWING 1279-R03A-165028 FOR
DRIVER ENCLOSURE SCHEMATIC

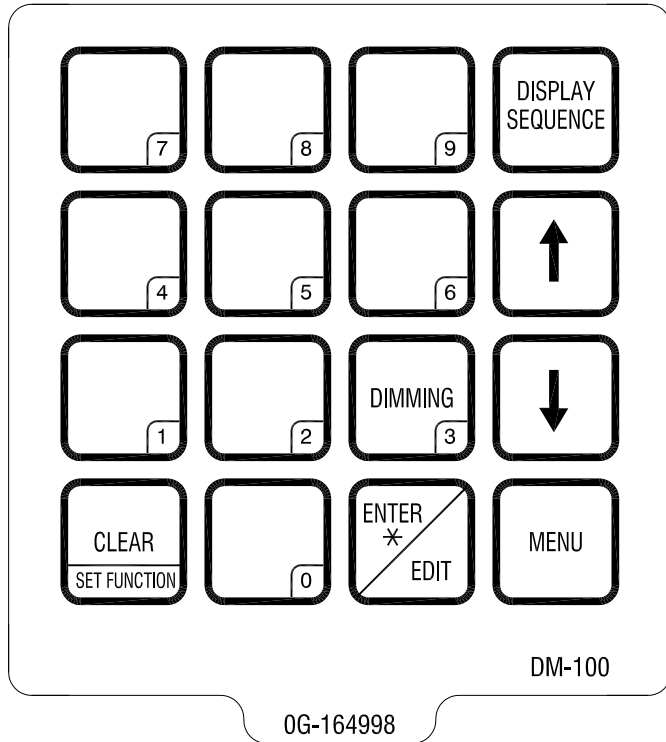
REV.	DATE	DESCRIPTION	BY	APPR.
07	06 APR 05	REVISED WIRING TABLE, CHANGED SOME CABLES.	ATP	
06	07 OCT 04	UPDATED PER NEW ASSEMBLES	RT	
05	19 SEP 02	CHANGED TO OUTDOOR CONTROL ONLY. ADDED HOST AND CLIENT DISPLAY FIGURES.	AVB	
04	10 SEP 02	REVISED CONFIGURATION OF CONTROL LOCATION FOR THE BUILDING LOCATION WITH NEW J-BOX, 0A-1196-0099.	NMB	
03	14 JUL 02	ADDED NEW NOTES FOR LIGHT AND TEMP SENSORS.	MWM	
02	25 JUN 02	CHANGED WALL PACK TRANSFORMER FROM 0F-1056-0004 TO T-1118	MWM	
01	30 MAY 02	REVISED ALL WIRING CHARTS AND ADDED PROPRIETARY NOTES.	MWM	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATATIME LED DISPLAYS
TITLE: RISER DIAGRAM, OUTDOOR WIRE CONTROL, DATA TIME/MAS.
DES. BY: MMILLER DRAWN BY: MMILLER DATE: 15 APR 02

REVISION	APPR. BY:	1279-R01A-164988
07	SCALE: NONE	



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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: INSERT, OG-164998 PRICE/T&T DISPLAY

DES. BY: EBRAVEK

DRAWN BY: EBRAVEK

DATE: 5 APR 02

REVISION

APPR. BY:

SCALE:

1=1

1196-E07A-164998

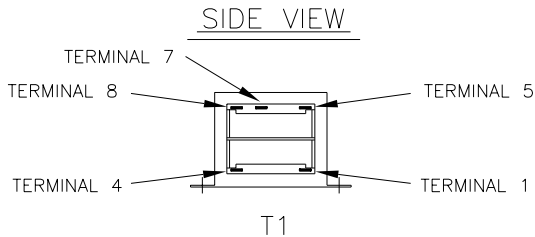
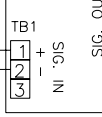
REV.	DATE	DESCRIPTION	BY	APPR.
00				

LANDLINE MODEM
OP-1279-0003
COATED MODEM
(INSTALL OPTION)

OP-1110-0011

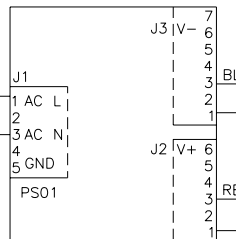
TB3

- 1 TAN
- 2 RED
- 3
- 4 GRY
- 5 BRN
- 6 RED
- 7 BLK
- 8

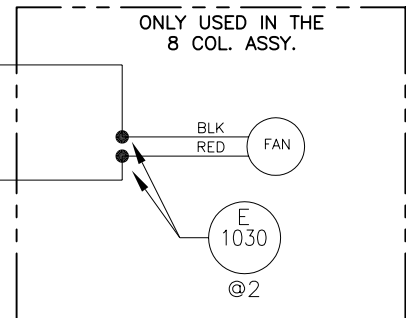


TB4

- 1
- 2
- 3



A-1720
POWER SUPPLY



4 COL. DRIVER
OP-1192-0067
NON-COATED DRIVER
OP-1192-0068
COATED DRIVER

8 COL. DRIVER
OP-1192-0081
NON-COATED DRIVER
OP-1192-0082
COATED DRIVER

NOTES:

ALL CONDUCTORS ARE 18AWG.

REV.	DATE	DESCRIPTION	BY	APPR.
08	17 DEC 03	CHANGED WIRE COLORS OF T1 CONNECTIONS. ADDED SIDE VIEW OF T1.	JBS	
07	29 APR 03	ADDED T1, FOR TIMING.	TAS	MWM
06	24 FEB 03	CHANGED J3 ON POWER SUPPLY TO 7 PINS PER ECO-27985.	AVB	
05	14 JAN 03	CHANGED THE BLU TEXT TO RED ON TB3 CONNECTOR	CME	
04	24 OCT 02	CHANGED 12V DC WIRING CONNECTIONS FROM MASC DRIVER TO SIGNAL SURGE PROTECTOR, LANDLINE MODEM AND TERMINAL BLOCK	JBS	
03	29MAY02	MOVED WIRES GOING INTO PIN 6 & 9 OF P17 TO PIN 10 & 12 OF P17	NMB	
02	06 MAY 02	CHANGED WIRE COLORS FOR TB3 CONNECTIONS	MWM	
01	24APR02	ADDED TB3-7 & 8 CONNECTIONS TO 4 COL. LED DRIVER. ADDED P22 AND J22 ALSO.	THS	

0A-1279-0086
MULTI PURPOSE HARNESS ASSY.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA TIME LED DISPLAYS

TITLE: SCHEMATIC; MULTIPURPOSE LED DRVR

DES. BY: MMILLER

DRAWN BY: MMILLER

DATE: 08 APR 02

REVISION

APPR. BY:

08

SCALE: 1=1

1279-R03A-165028

OP-1192-0067 UNCOATED OR OP-1192-0068 COATED
4 COLUMN MASC LED DRIVER

J-27 RS232 COM	
PIN	FUNCTION
1	RX-P
2	TX-P
3	GND-N
4	+12V -P
5	DCD-P
6	RESET-P

J19 ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

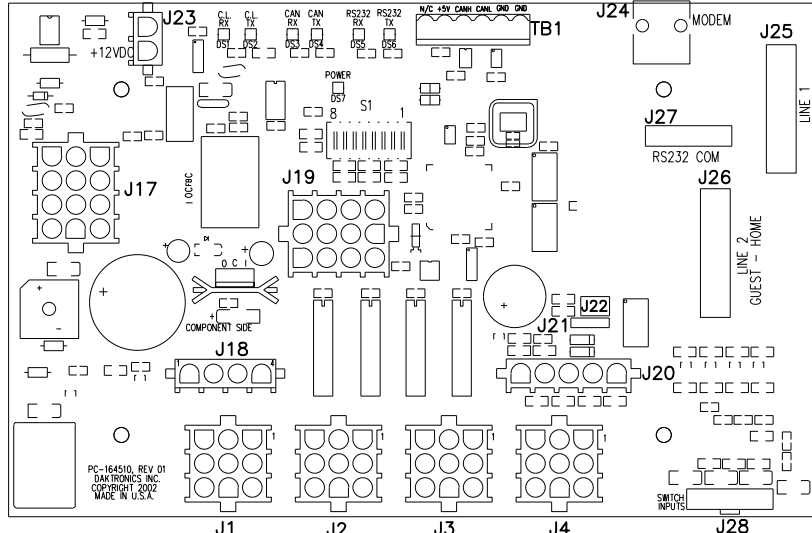
TB1 CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

J24	
PIN	FUNCTION
1	MODEM_RTS-P
2	MODEM_RESET-P
3	MODEM_TX-P
4	GND-N
5	MODEM_RX-P
6	MODEM_DCD-P

J23 +12VDC	
PIN	FUNCTION
1	+12VDC-P
2	GND-N

J17 MAIN	
PIN	FUNCTION
1	CLIN-P
2	CLIN-N
3	232IN-P
4	CLOUT-P
5	CLOUT-N
6	16VAC-P
7	GND-N
8	N/C
9	16VAC-N
10	GND-N
11	N/C
12	+VBB-P

J18 RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT2-N
3	120SW1-N
4	120SW1-P



J25			
FUNCTION	PIN	PIN	FUNCTION
L1_ID0-P	1	20	RED1-P
L1_ID1-P	2	19	GRN1-P
GND-N	3	18	L1_LATCH-P
GND-N	4	17	L1_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L1_CLK-P
GND-N	8	13	GRN3-P
L1_ID2-P	9	12	RED4-P
L1_ID3-P	10	11	GRN4-P

J26			
FUNCTION	PIN	PIN	FUNCTION
L2_ID0-P	1	20	RED1-P
L2_ID1-P	2	19	GRN1-P
GND-N	3	18	L2_LATCH-P
GND-N	4	17	L2_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L2_CLK-P
GND-N	8	13	GRN3-P
L2_ID2-P	9	12	RED4-P
L2_ID3-P	10	11	GRN4-P

J1-4 DIGIT	
PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VBB-P
8	SEGH-N
9	SEGG-N

J20 PROTOCOL	
PIN	FUNCTION
1	GND
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N

J21 ISP	
PIN	FUNCTION
1	VFP-P
2	BKD-P
3	GND-N
4	RESET-P

J28 SWITCH	
PIN	FUNCTION
1	SWITCH1-P
2	SWITCH1-N
3	SWITCH2-P
4	SWITCH2-N
5	SWITCH3-P
6	SWITCH3-N
7	SWITCH4-P
8	SWITCH4-N

J22 ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

NOTE:

- RED LED CL RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- GREEN LED CL TX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- RED LED CAN RX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- GREEN LED CAN TX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- IF THERE IS NOT A CAN DEVICE CONNECTED TO TB1, CAN RX AND TX LEDS WILL BE ON AND STEADY.
- RED LED RS232 RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED RS232 TX6 WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED POWER INDICATES THE DRIVER HAS POWER

REV	DATE:	CORRECTED S1 PINOUT	BY:
04	01 FEB 13		RBN
3	27 NOV 04	UPDATE DRIVER J-27 FOR CORRECT PIN OUT	BY:
2	16 MAY 03	UPDATE DRIVER FOR LATEST REVISION OF MASC DRIVER.	BY:
1	06 JUN 02	ADDED LED LABELS ADDED NEW NOTES	BY:

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	<p>DO NOT SCALE DRAWING</p>	
<p>PROJ: OUTDOOR LED SCOREBOARDS</p>		
<p>TITLE: 4 COLUMN MASC LED DRIVER SPECIFICATIONS</p>		
DESIGN:	DRAWN: JSPAHR	DATE: 29 APR 02
SCALE: 1=2		
SHEET	REV	JOB NO:
	04	P 1192
		FUNC -TYPE-SIZE
		R - 07 - A
		166216

J23 +12VDC	
PIN	FUNCTION
1	+12VDC-P
2	GND-N

OP-1192-0081 UNCOATED
OR OP-1192-0082 COATED
8 COLUMN MASC LED DRIVER

TB1 - CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

J24	
PIN	FUNCTION
1	MODEM_RTS-P
2	MODEM_RESET-P
3	MODEM_TX-P
4	GND-N
5	MODEM_RX-P
6	MODEM_DCD-P

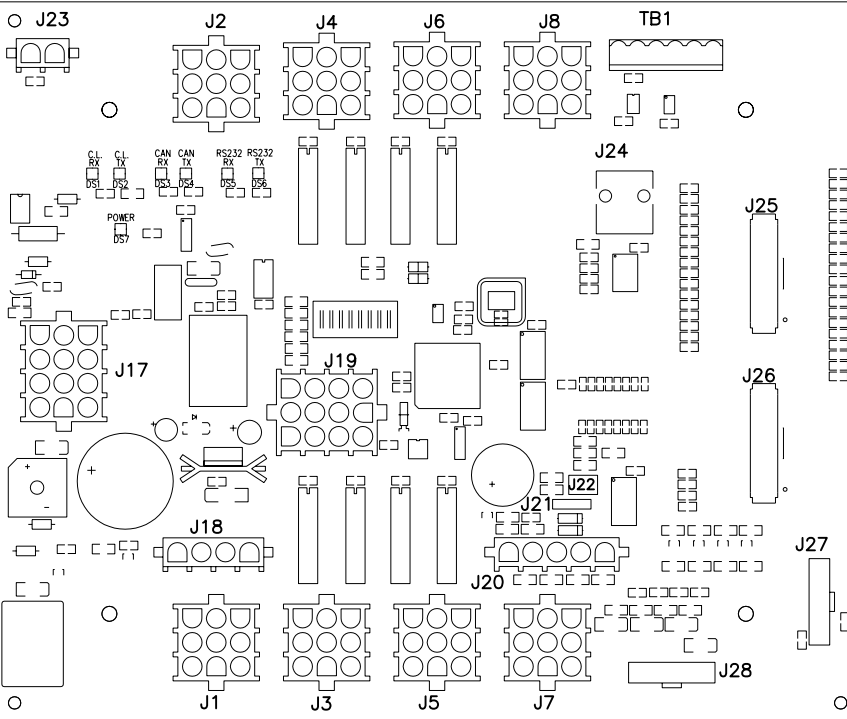
J25			
FUNCTION	PIN	PIN	FUNCTION
ID3-P	21	20	GND-N
FREE0-P	22	19	GND-N
ID2-P	23	18	GND-N
ROWSEL2-P	24	17	GND-N
GRN.DIM-P	25	16	GND-N
CLK-P	26	15	GND-N
GRN4-P	27	14	GND-N
RED4-P	28	13	GND-N
GRN3-P	29	12	GND-N
RED3-P	30	11	GND-N
GRN2-P	31	10	GND-N
RED2-P	32	9	GND-N
GRN1-P	33	8	GND-N
RED1-P	34	7	GND-N
RED.DIM-P	35	6	GND-N
LAT-P	36	5	GND-N
ROWSEL1-P	37	4	GND-N
ROWSEL0-P	38	3	GND-N
ID1-P	39	2	GND-N
ID0-P	40	1	GND-N

J19 - ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

J17 - MAIN	
PIN	FUNCTION
1	CLIN-P
2	CLIN-N
3	232IN-P
4	CLOUT-P
5	CLOUT-N
6	16VAC-P
7	GND-N
8	N/C
9	16VAC-N
10	GND-N
11	N/C
12	+VBB-P

J18 - RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT-N
3	120SW1-N
4	120SW1-P

J1-8 DIGITS	
PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VBB-P
8	SEGH-N
9	SEGG-N



J20 - PROTOCOL	
PIN	FUNCTION
1	GND
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N

J21 - ISP	
PIN	FUNCTION
1	VFP-P
2	BKD-P
3	GND-N
4	RESET-P

J22 - ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

J28 - SWITCH	
PIN	FUNCTION
1	SWITCH1-P
2	SWITCH1-N
3	SWITCH2-P
4	SWITCH2-N
5	SWITCH3-P
6	SWITCH3-N
7	SWITCH4-P
8	SWITCH4-N

J27 - TPIC	
PIN	FUNCTION
8	GND-N
7	GND-N
6	DIG.DATA-P
5	DIG.STROBE-P
4	DIG.CLK-P
3	DIG.OE-N
2	+VBB-P
1	+5V-P

J26			
FUNCTION	PIN	PIN	FUNCTION
N/C	21	20	GND-N
FREE0-P	22	19	GND-N
N/C	23	18	GND-N
ROWSEL2-P	24	17	GND-N
GRN.DIM-P	25	16	GND-N
CLK-P	26	15	GND-N
N/C	27	14	GND-N
N/C	28	13	GND-N
N/C	29	12	GND-N
N/C	30	11	GND-N
GRN2-P	31	10	GND-N
RED2-P	32	9	GND-N
GRN1-P	33	8	GND-N
RED1-P	34	7	GND-N
RED.DIM-P	35	6	GND-N
LAT-P	36	5	GND-N
ROWSEL1-P	37	4	GND-N
ROWSEL0-P	38	3	GND-N
N/C	39	2	GND-N
N/C	40	1	GND-N

NOTES:

- WITH NO ADDRESS PINS SELECTED THE DRIVER WILL DEFAULT TO STANDARD PROTOCOL.
- RED LED DS1 WILL BE ON WHEN THE DRIVER IS RECEIVING CURRENT LOOP SIGNAL AND OFF WHEN THERE IS NO SIGNAL.
- GREEN LED DS2 WILL BE ON WHEN THE DRIVER TRANSMITS CURRENT LOOP SIGNAL.
- RED LED DS3 WILL BLINK WHEN THE DRIVER RECEIVES CAN SIGNAL.
- GREEN LED DS4 WILL BLINK WHEN THE DRIVER TRANSMITS CAN SIGNAL.
- IF BOTH DS3 AND DS4 ARE ON CONTINUOUSLY, THE CAN BUS IS IN AN ERROR STATE (NO CONNECTION TO CAN NETWORK).
- RED LED DS5 WILL BE ON WHEN THE DRIVER RECEIVES RS-232 SIGNAL.
- GREEN LED DS6 WILL BE ON WHEN THE DRIVER TRANSMITS RS-232 SIGNAL.
- GREEN LED DS7 INDICATES THAT THE DRIVER HAS POWER.

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REV.	DATE	DESCRIPTION	BY	APPR.
02	22 NOV 04	CHANGED NOTES RELATING TO LED FUNCTIONS.	AVB	
01	06 JUN 02	ADDED NEW NOTES ADDED LABELS TO LEDS	JJS	

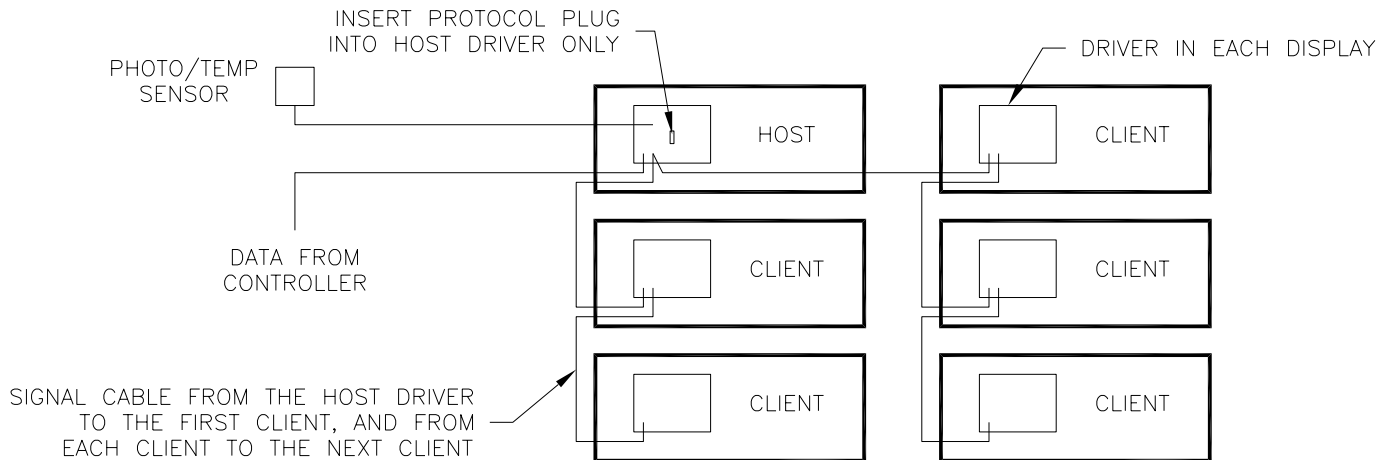
PROJ:	TITLE: 8 COLUMN MASC LED DRIVER SPECIFICATIONS		
DES. BY:	DRAWN BY: JSPAHR	DATE: 16 MAY 02	
REVISION	APPR. BY:	1192-R07A-167237	
02	SCALE: 1=2		

HOST/CLIENT DESIGNATIONS:

ONE DRIVER IN EACH SIGN INSTALLATION IS DESIGNATED AS THE HOST DRIVER. THIS DRIVER RECEIVES ITS SIGNAL (DATA) DIRECTLY FROM THE CONTROLLER AND IS ALSO CONNECTED TO THE PHOTO/TEMP SENSOR. THE DESIGNATION AS HOST IS DETERMINED BY WHICH DRIVER HAS THE PROTOCOL PLUG INSERTED. THE PROTOCOL PLUG IS A 5-PIN PLUG SUPPLIED WITH THE PHOTO/TEMP SENSOR KIT.

THE OTHER DRIVERS ARE DESIGNATED AS CLIENT DRIVERS. THE FIRST CLIENT DRIVER RECEIVES ITS SIGNAL (DATA) FROM THE HOST AND THEN TRANSMITS SIGNAL TO THE NEXT CLIENT, AND THAT ONE TO THE NEXT UNTIL ALL CLIENTS IN THE SYSTEM HAVE BEEN CONNECTED.

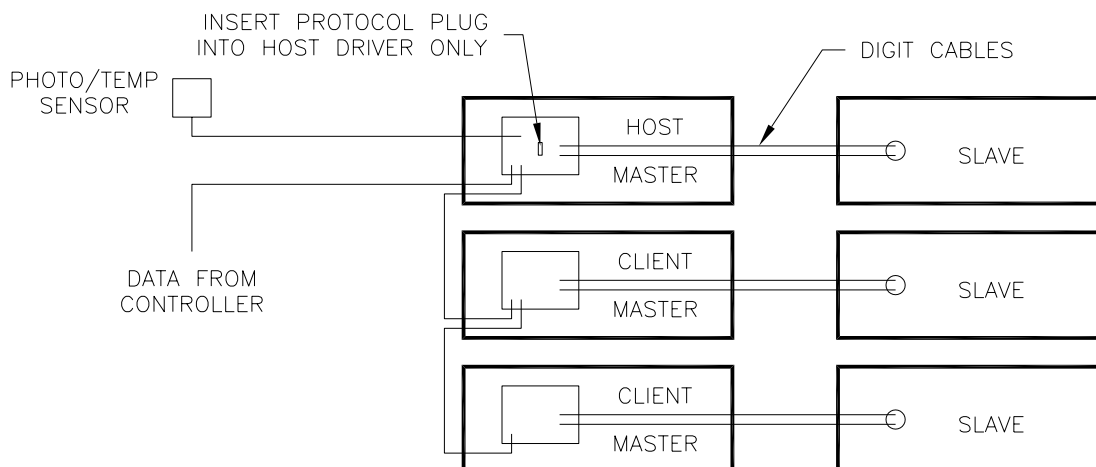
THIS HOST/CLIENT RELATIONSHIP MAY BE USED IN MULTI-LINE DISPLAYS, AS PICTURED, OR ON SINGLE-LINE 2V (DOUBLE SIDED) DISPLAYS, WHERE EACH DISPLAY FACE CONTAINS A DRIVER.



MASTER/SLAVE DESIGNATIONS:

SOME 2V INSTALLATIONS USE A DISPLAY WITH A DRIVER ON ONE SIDE OF THE SIGN, AND A DISPLAY WITHOUT A DRIVER ON THE OTHER SIDE OF THE SIGN. THE DISPLAY WITH A DRIVER IS DESIGNATED AS A MASTER, WHILE THE DISPLAY WITHOUT A DRIVER IS THE SLAVE. THE SLAVE DISPLAY HAS LONG CABLES EXTENDING FROM THE BACK, WHICH ARE TO BE ROUTED THROUGH A HOLE IN THE BACK OF THE MASTER DISPLAY. THE PLUGS ON THESE CABLES ARE TO BE CONNECTED TO THE MASTER'S DRIVER DURING INSTALLATION.

IF THE INSTALLATION IS MULTI-LINE, AS PICTURED, THE DRIVERS ON THE MASTER SIDE OF THE SIGN FOLLOW THE HOST/CLIENT RELATIONSHIP DESCRIBED ABOVE.



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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATATIME LED DISPLAYS

TITLE: HOST/CLIENT AND MASTER/SLAVE DEFINITIONS

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 06 JUN 02

REVISION

APPR. BY:

SCALE: NONE

1279-R04A-168376

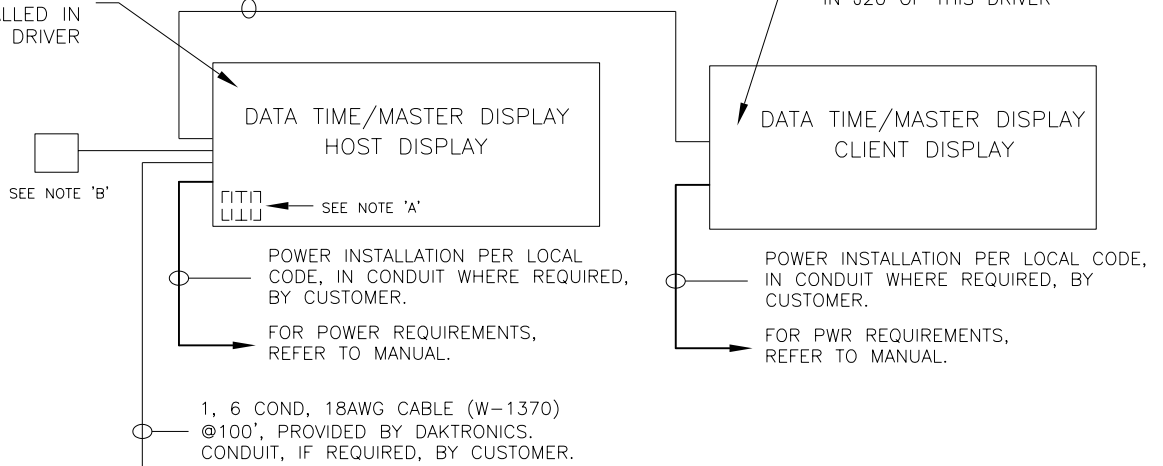
REV.	DATE	DESCRIPTION	BY	APPR.
02	23 SEP 02	ADDED PROTOCOL PLUG NOTE.	AVB	
01	09 JUL 02	REMOVED PHOTO/TEMP SENSOR PART NO.	AVB	

WIRE CONTROL FROM BUILDING LOCATION

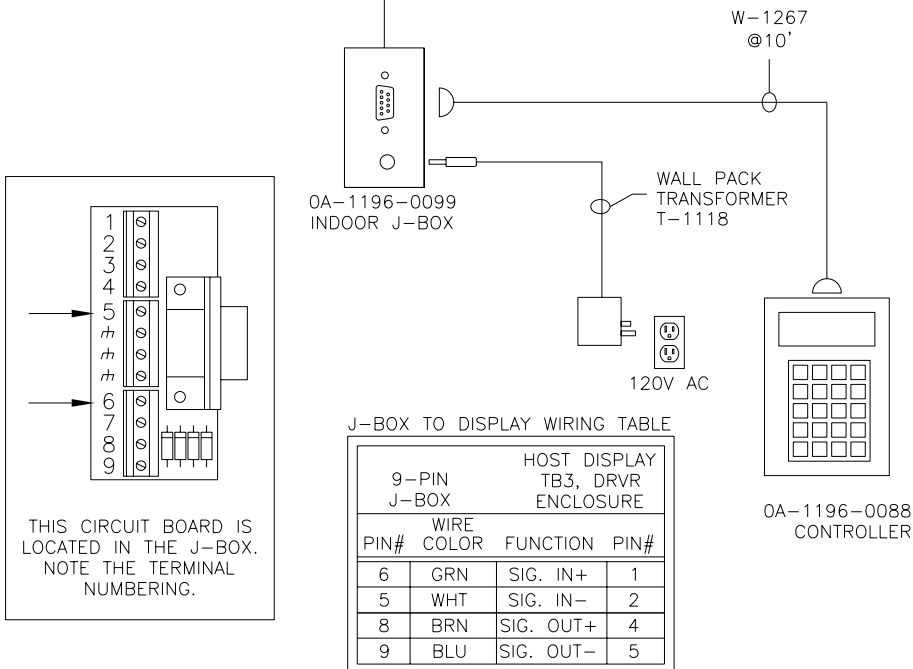
NOTE: 5-PIN PROTOCOL PLUG IS TO BE INSTALLED IN J20 OF THIS DRIVER

1 PAIR, 22AWG CABLE (W-1077)
IN CONDUIT WHERE REQUIRED.

NOTE: 5-PIN PROTOCOL PLUG IS NOT TO BE INSTALLED IN J20 OF THIS DRIVER



CONTROL LOCATION



TEMP/LIGHT SENSOR WIRING TABLE

TB1, SENSOR			TB1, HOST DRIVER	
PIN#	WIRE COLOR	OUTPUT#/ FUNCTION	PIN#	
1	RED	+5V	2	
2	GRN	CANH	3	
3	WHT	CANL	4	
4	BLK	GND-N	5	

J-BOX TO DISPLAY WIRING TABLE

9-PIN J-BOX		HOST DISPLAY TB3, DRVR ENCLOSURE	
PIN#	WIRE COLOR	FUNCTION	PIN#
6	GRN	SIG. IN+	1
5	WHT	SIG. IN-	2
8	BRN	SIG. OUT+	4
9	BLU	SIG. OUT-	5

DISPLAY TO DISPLAY WIRING TABLE

HOST DISPLAY TB3, DRIVER ENCLOSURE		CLIENT DISPLAY TB3, DRIVER ENCLOSURE	
PIN#	WIRE COLOR	FUNCTION	PIN#
4	GRN	SIGNAL-P	1
5	WHT	SIGNAL-N	2

THIS CIRCUIT BOARD IS LOCATED IN THE J-BOX. NOTE THE TERMINAL NUMBERING.

NOTE 'A':
0A-1279-0203, INTERNAL LIGHT SENSOR KIT INCLUDED ON DATA TIME MODELS. REFER TO MANUAL FOR DETAILS.

INSTALL "PROTOCOL 4" PLUG IN THE DRIVER IN THE HOST DISPLAY ONLY.

NOTE 'B':
0A-1151-0005 EXTERNAL TEMP/LIGHT SENSOR /W 8' OF 2 PAIR CABLE INCLUDED WITH DATA MASTER MODELS, INSTALLED ON SITE BY OTHERS.

REFER TO DRAWING 1279-R03A-165028 FOR DRIVER ENCLOSURE SCHEMATIC

REV.	DATE	DESCRIPTION	BY	APPR.
04	06 APR 05	REVISED WIRING TABLE, CHANGED SOME CABLES.	ATP	
03	07 OCT 04	UPDATED PER NEW ASSEMBLES	RT	
02	20-SEP-04	CHANGED PART NUMBER FOR LIGHT SENSOR	JHF	
01	13 MAR 03	ADDED J-BOX CIRCUIT BOARD PICTURE. CHANGED PART NUMBERS FOR LIGHT SENSOR AND TEMP SENSOR ASSEMBLIES.	AVB	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATETIME LED DISPLAYS
TITLE: RISER DIAGRAM, INDOOR WIRE CONTROL, DATA TIME/MAS.

DES. BY: DRAWN BY: M MILLER DATE: 18 SEP 02

REVISION	APPR. BY:	1279-R01A-175342
04	SCALE: NONE	

Modem Installation For Land Line

- 1.) Make sure power is off.
- 2.) Mount Modem on side of enclosure using supplied hardware.
- 3.) Plug in the RJ-45 cable end to J-6 on modem and the RJ-11 cable end into J-24 on driver.
- 4.) Plug in P3 (12VDC) to J3 on modem.
- 5.) Connect phone line to modem on J5 (RJ-11 jack) or wire to TB2, Tip and Ring inputs.
- 6.) Turn power on to display.

Land line Modem Status LEDs

– Power (Green) LED– ON when power is applied.

– Modem RX & TX LEDs – blink briefly after MASC driver power up initialization then remain off until dialup connection is made. When connection is made these LEDs blink when data is sent to and from the MASC driver via remote modem.

– Carrier Detect (Red LED)
This LED is on when remote modem is connected VIA the telephone network.

– PC Connect (AMB LED)
Not used in this configuration

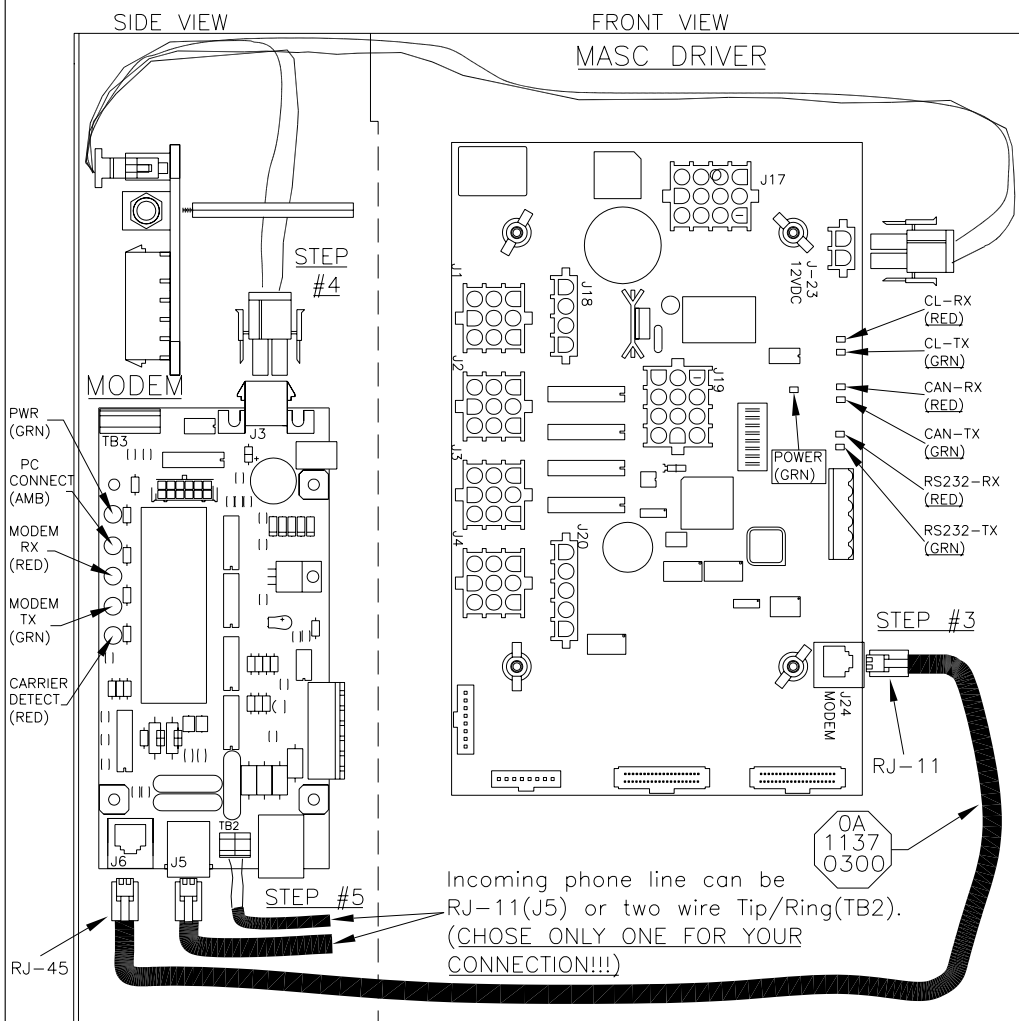
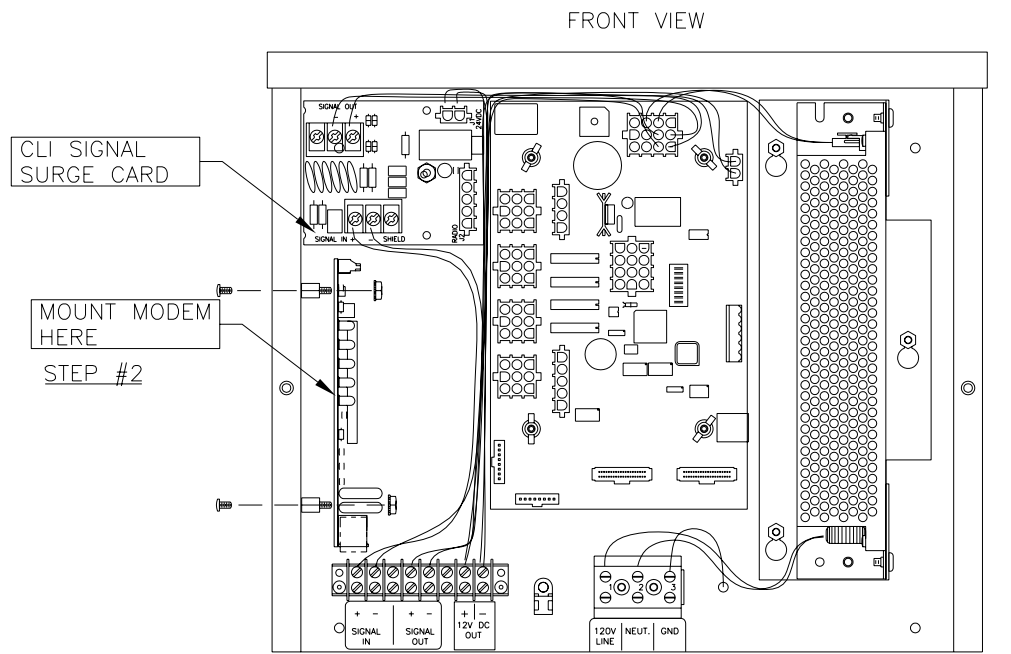
MASC Driver Status LEDs

– Power LED – (Green LED) on when power is applied.

– RS232 RX– (Red LED) on when modem is connected. RS232 RX blinks off when RS232 TX is ON.

– RS232TX– (Green LED) should blink briefly during power up and stay off until dial-up connection is made. RS232 TX will blink when the driver responds to message sent through the modem and when the driver initializes the modem.

Refer ED-13694: Modem Connection and Troubleshooting Reference.



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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATETIME LED DISPLAYS

TITLE: MODEM INSTALLATION; 4 COL MASC DRV. ENC. REFERENCE

DES. BY:

DRAWN BY: DDINING

DATE: 15 OCT 02

REVISION

APPR. BY:

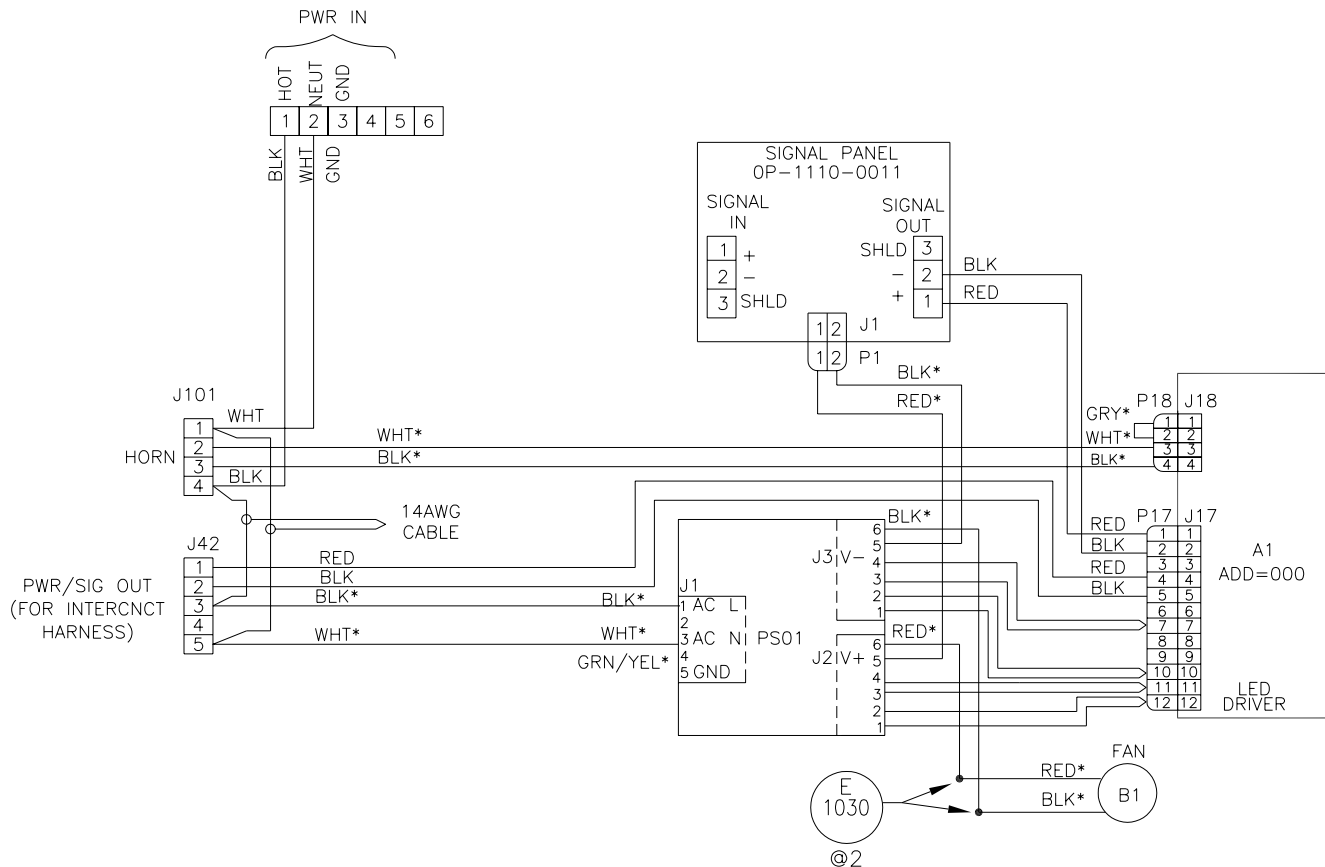
01

SCALE: 1=4

1279-R10A-177039

REV.	DATE	DESCRIPTION	BY	APPR.
01	24 JUL 03	CHANGED CABLE TO 0A-1137-0300	JJC	DMW

MASTER CONFIGURATION
0A-1192-2254



ALL POWER CONDUCTORS ARE 14AWG EXCEPT * INDICATES 18AWG CONDUCTORS.

ALL SIGNAL CONDUCTORS ARE 22AWG CONDUCTORS.

REFERENCE DWG 1192-R06C-178208 FOR DETAILED CABLE ASSEMBLY DIAGRAM.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: SCHEMATIC; GEN III OUTDOOR LED, 8 COLUMN DRVR			
DES. BY: MMILLER		DRAWN BY: MMILLER	
DATE: 05 NOV 02			
REVISION	APPR. BY:	1192-R03A-177935	
	SCALE: 1=1		

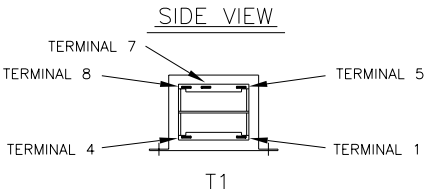
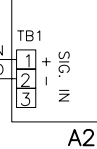
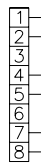
01	10 DEC 02	ADDED BLOCKS 5 AND 6 TO PWR IN	AJL	MWM
REV.	DATE	DESCRIPTION	BY	APPR.

LANDLINE MODEM
OP-1279-0003
COATED MODEM
(INSTALL OPTION)



OP-1110-0011

TB3



A2

T1

BLK 4

WHT 1

T-1072

J1

BLK

WHT

GRN/YEL

PS01

A-1720

POWER SUPPLY

J1

BLK

WHT

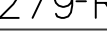
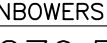
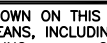
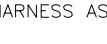
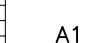
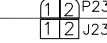
GRN/YEL

PS02

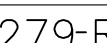
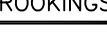
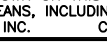
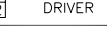
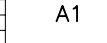
A-1720

POWER SUPPLY

RED BLK



16 COL. DRIVER
OP-1192-0085
NON-COATED DRIVER
OP-1192-0086
COATED DRIVER



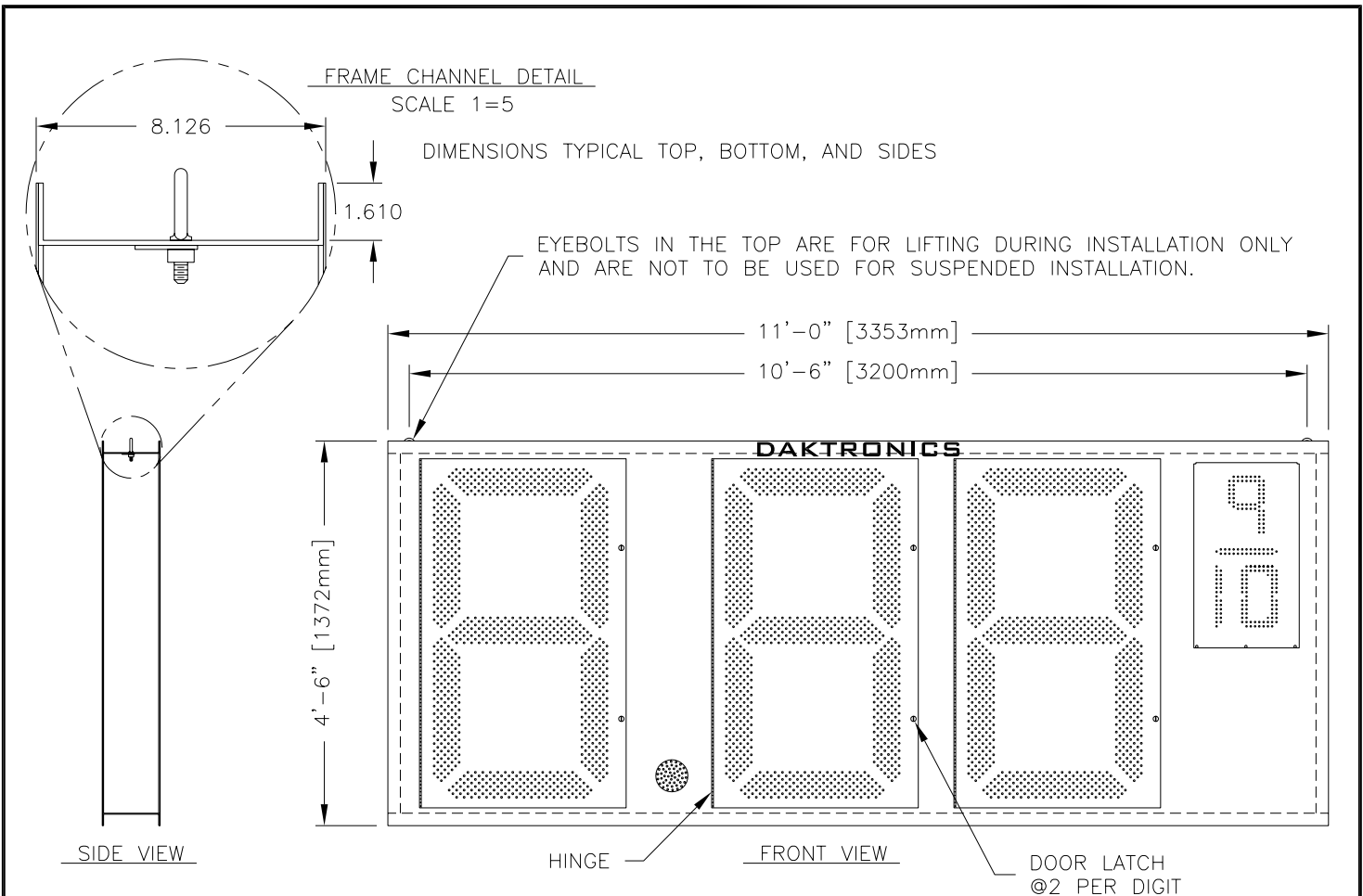
NOTES:
ALL CONDUCTORS ARE 18AWG.

0A-1279-0177
MULTI PURPOSE HARNESS ASSY.

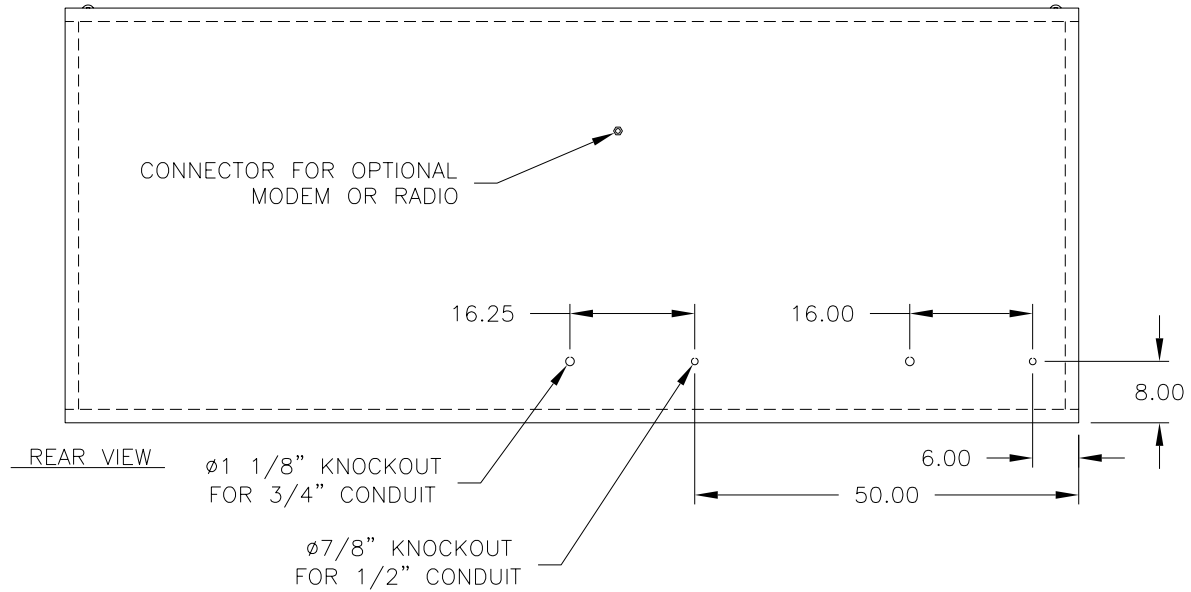
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REV.	DATE	DESCRIPTION	BY	APPR.
03	17 DEC 03	CHANGED WIRE COLORS OF T1 CONNECTIONS. ADDED SIDE VIEW OF T1.	JBS	
02	30 APR 03	ADDED T1, FOR TIMING.	TAS	MWM
01	14 JAN 03	CHANGED THE BLU TEXT TO RED ON TB3 CONNECTOR	CME	

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ:	DATA TIME LED DISPLAYS	
TITLE:	SCHEMATIC; 16 COL MULTIPURPOSE LED DRVR	
DES. BY:	MMILLER	DRAWN BY: NBOWERS
		DATE: 05DEC02
REVISION	APPR. BY:	1279-R03A-179599
03	SCALE: 1=1	



FRAME IS MADE OF EXTRUDED ALUMINUM CHANNEL, 8.000" X 1.750", 0.141" THICK. FRONT AND BACK ARE 0.063" ALUM. SHEET.



APPROXIMATE WEIGHT: 280 LB [127 KG]

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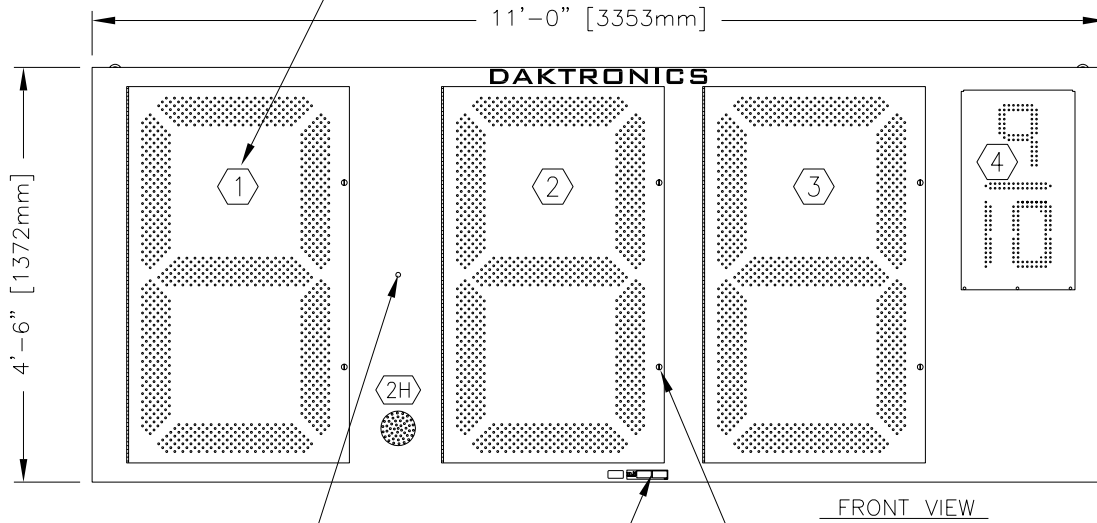
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA 3TIME LED DISPLAYS
TITLE: MECHANICAL SPECS, DF-1020-48, G3
DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 21 JAN 03

REV.	DATE	DESCRIPTION	BY	APPR.
01	08 MAR 05	UPDATED HOLE PATTERN IN BACKSHEET.	MGL	
01	31 MAR 04	ADJUSTED BACK SHEET THICKNESS PER DESIGN CHANGES.	MGL	

REVISION 02 APPR. BY: SCALE: 1=25 1279-R08A-181672

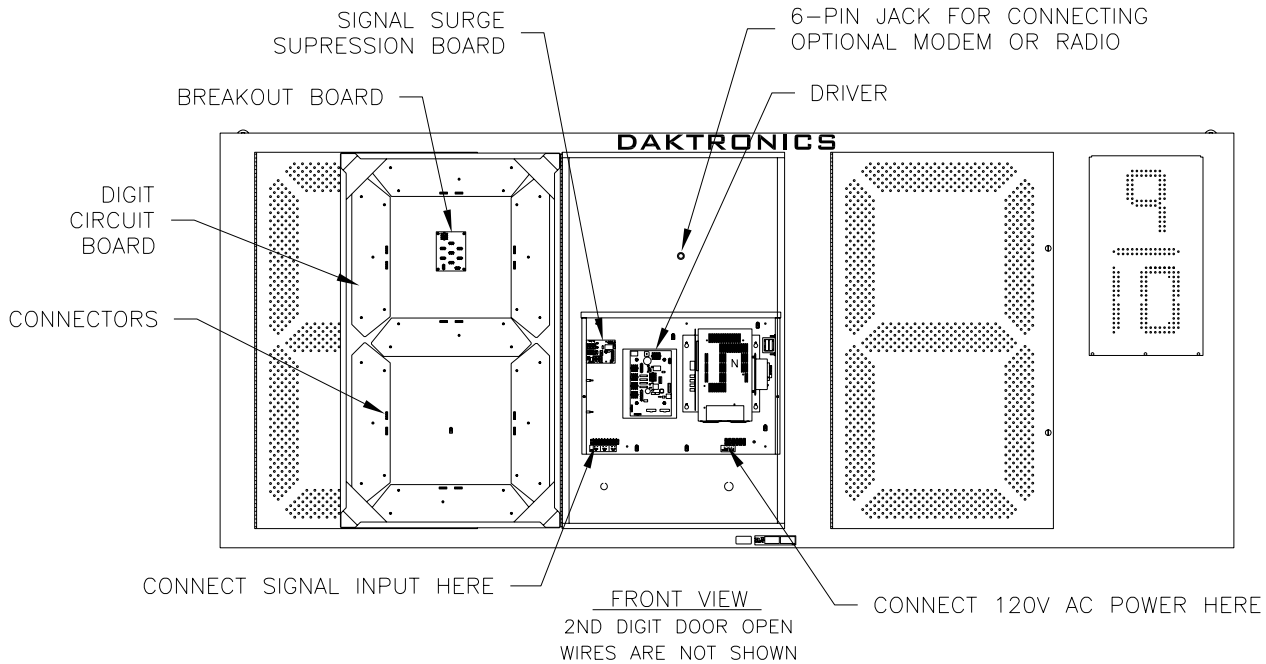
NUMBERS SHOWN ON DIGITS INDICATE WHICH DRIVER CONNECTORS ARE WIRED TO EACH DIGIT. EACH 48" DIGIT IS WIRED TO FOUR DRIVER CONNECTORS.



REMOVE THE PLASTIC PLUG AND INSTALL THE LIGHT SENSOR HERE

LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENT.

TO ACCESS THE DRIVER AND HOOKUP TERMINALS, TURN THESE LATCHES COUNTER-CLOCKWISE AND OPEN THE DOOR.



ELECTRICAL REQUIREMENT:
120V AC, 15 AMP CIRCUIT
MAX POWER CONSUMPTION IS 300 WATTS.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DATA TIME LED DISPLAYS			
TITLE: ELECTRICAL SPECS, DF-1020-48, G3			
DES. BY: AVB		DRAWN BY: AVB	
		DATE: 21 JAN 03	
REVISION	APPR. BY:	1279-R04A-181673	
01	SCALE: 1=25		

01	08 MAR 05	UPDATED DRIVER ENCLOSURE AND DIGIT DESIGNATIONS.	MGL	
REV.	DATE	DESCRIPTION	BY	APPR.

FOR DM-100 OR VENUS 1500 CONTROLLED SYSTEMS:

IF THE SIGN HAS MORE THAN ONE DISPLAY, INSTALL THE LIGHT SENSOR IN THE HOST DISPLAY ONLY.

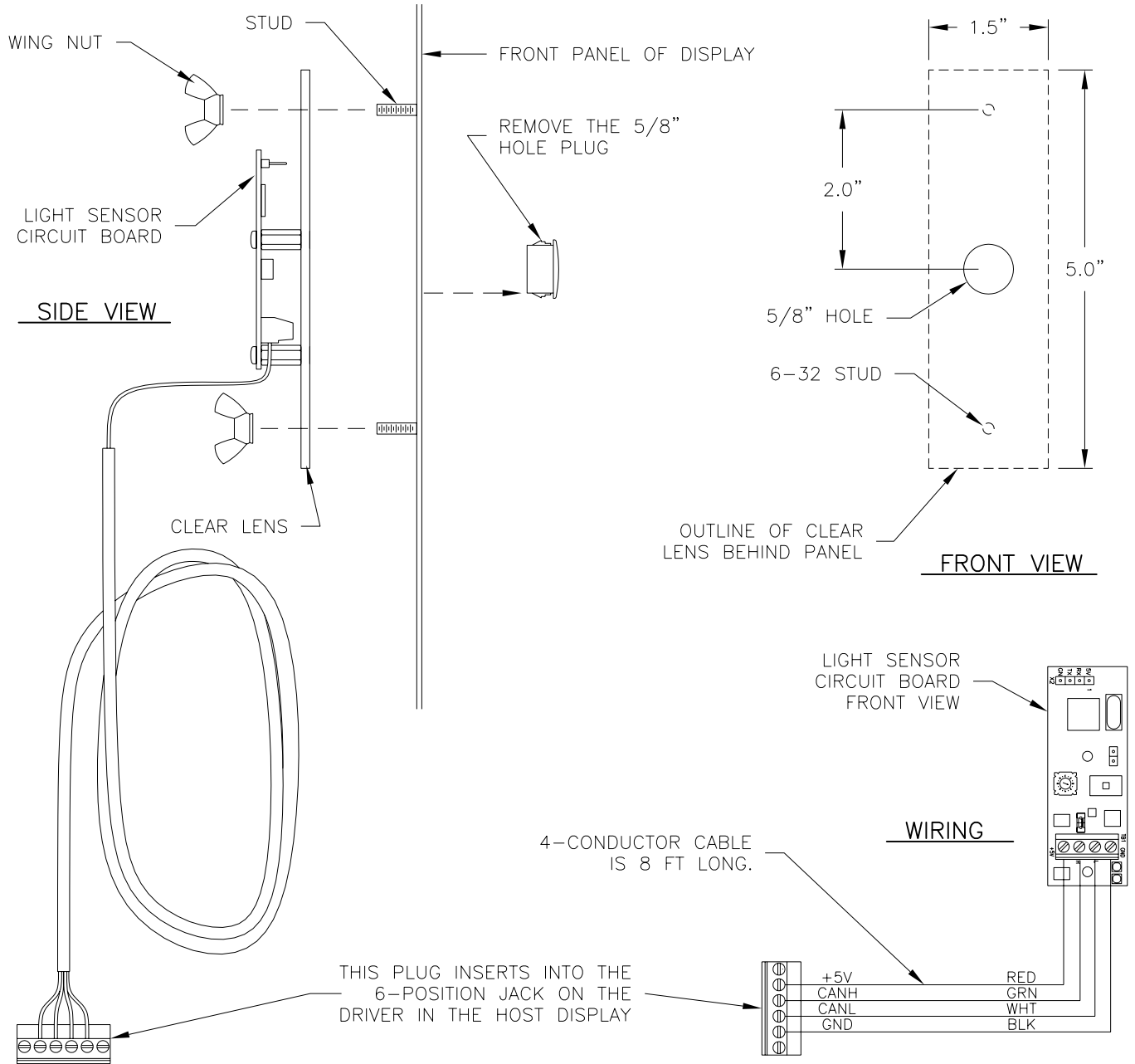
FOR DAKMAP (MULTIDROP) CONTROLLED SYSTEMS:

REFER TO DRAWING A-210516 FOR WIRING OPTIONS.

LOCATE THE 5/8" [16 MM] HOLE IN THE FRONT OF THE DISPLAY. THE LOCATION VARIES WITH THE SIZE AND MODEL OF THE DISPLAY. THE HOLE IS CAPPED WITH A BLACK PLASTIC PLUG. REMOVE THE PLUG. IF THE HOLES DO NOT EXIST IN THE DISPLAY, DRILL HOLES AS SHOWN AT RIGHT AND USE 6-32 MACHINE SCREWS TO MOUNT THE SENSOR ASSEMBLY.

THERE ARE TWO 6-32 STUDS ABOVE AND BELOW THE HOLE. POSITION THE LIGHT SENSOR ASSEMBLY OVER THE STUDS WITH THE CABLE AT THE BOTTOM. SECURE THE LIGHT SENSOR TO THE STUDS WITH THE TWO PLASTIC WING NUTS PROVIDED WITH THE LIGHT SENSOR KIT.

CONNECT THE 6-PIN PLUG ON THE END OF THE CABLE TO THE MATING JACK ON THE DRIVER.



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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATATIME LED DISPLAYS

TITLE: LIGHT SENSOR INSTALLATION, G3

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 21 FEB 03

REVISION

APPR. BY:

02

SCALE:

1=2

1279-R10A-183775

REV.	DATE	DESCRIPTION	BY	APPR.
02	10 MAY 04	UPDATED TEXT.	RT	
01	03 JUN 03	ADDED HOLE PATTERN DIMENSIONS.	AVB	

OP-1192-0085 UNCOATED
OR OP-1192-0086 COATED
16 COLUMN MASC LED DRIVER

J19 - ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

J23 +12VDC	
PIN	FUNCTION
1	+12VDC-P
2	GND-N

J17 - MAIN	
PIN	FUNCTION
1	CLIN-P
2	CLIN-N
3	232IN-P
4	CLOUT-P
5	CLOUT-N
6	16VAC-P
7	GND-N
8	N/C
9	16VAC-N
10	GND-N
11	N/C
12	+VBB-P

J18 - RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT-N
3	120SW1-N
4	120SW1-P

J1-16 DIGITS	
PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VBB-P
8	SEGH-N
9	SEGG-N

J20 PROTOCOL	
PIN	FUNCTION
1	GND
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N

J21 - ISP	
PIN	FUNCTION
1	VFP-P
2	BKD-P
3	GND-N
4	RESET-P

J22 - ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

J28 - SWITCH	
PIN	FUNCTION
1	SWITCH1-P
2	SWITCH1-N
3	SWITCH2-P
4	SWITCH2-N
5	SWITCH3-P
6	SWITCH3-N
7	SWITCH4-P
8	SWITCH4-N

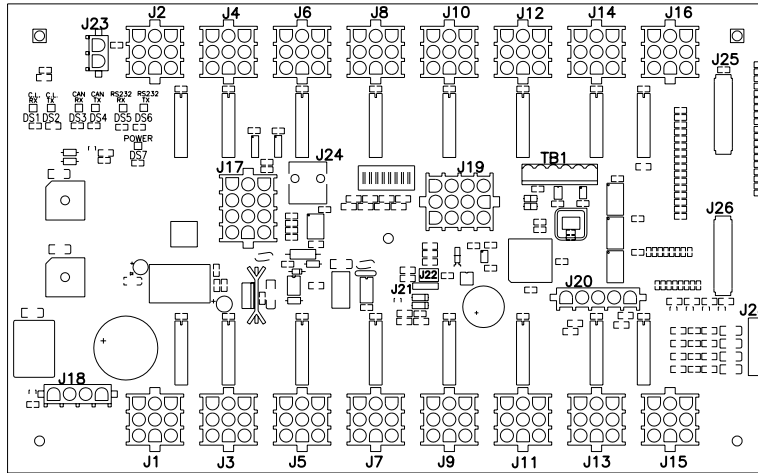
J27 - TPIC	
PIN	FUNCTION
8	GND-N
7	GND-N
6	DIG.DATA-P
5	DIG.STROBE-P
4	DIG.CLK-P
3	DIG.OE-N
2	+VBB-P
1	+5V-P

TB1 - CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

J24	
PIN	FUNCTION
1	MODEM_RTS-P
2	MODEM_RESET-P
3	MODEM_TX-P
4	GND-N
5	MODEM_RX-P
6	MODEM_DCD-P

J25			
FUNCTION	PIN	PIN	FUNCTION
ID3-P	21	20	GND-N
FREE0-P	22	19	GND-N
ID2-P	23	18	GND-N
ROWSEL2-P	24	17	GND-N
GRN.DIM-P	25	16	GND-N
CLK-P	26	15	GND-N
GRN4-P	27	14	GND-N
RED4-P	28	13	GND-N
GRN3-P	29	12	GND-N
RED3-P	30	11	GND-N
GRN2-P	31	10	GND-N
RED2-P	32	9	GND-N
GRN1-P	33	8	GND-N
RED1-P	34	7	GND-N
RED.DIM-P	35	6	GND-N
LAT-P	36	5	GND-N
ROWSEL1-P	37	4	GND-N
ROWSEL0-P	38	3	GND-N
ID1-P	39	2	GND-N
ID0-P	40	1	GND-N

J26			
FUNCTION	PIN	PIN	FUNCTION
N/C	21	20	GND-N
FREE0-P	22	19	GND-N
N/C	23	18	GND-N
ROWSEL2-P	24	17	GND-N
GRN.DIM-P	25	16	GND-N
CLK-P	26	15	GND-N
N/C	27	14	GND-N
N/C	28	13	GND-N
N/C	29	12	GND-N
N/C	30	11	GND-N
GRN2-P	31	10	GND-N
RED2-P	32	9	GND-N
GRN1-P	33	8	GND-N
RED1-P	34	7	GND-N
RED.DIM-P	35	6	GND-N
LAT-P	36	5	GND-N
ROWSEL1-P	37	4	GND-N
ROWSEL0-P	38	3	GND-N
N/C	39	2	GND-N
N/C	40	1	GND-N



NOTES:

- WITH NO ADDRESS PINS SELECTED THE DRIVER WILL DEFAULT TO STANDARD PROTOCOL.
- RED LED DS1 WILL BE ON WHEN THE DRIVER IS RECEIVING CURRENT LOOP SIGNAL AND OFF WHEN THERE IS NO SIGNAL.
- GREEN LED DS2 WILL BE ON WHEN THE DRIVER TRANSMITS CURRENT LOOP SIGNAL.
- RED LED DS3 WILL BLINK WHEN THE DRIVER RECEIVES CAN SIGNAL.
- GREEN LED DS4 WILL BLINK WHEN THE DRIVER TRANSMITS CAN SIGNAL.
- IF BOTH DS3 AND DS4 ARE ON CONTINUOUSLY, THE CAN BUS IS IN AN ERROR STATE (NO CONNECTION TO CAN NETWORK).
- RED LED DS5 WILL BE ON WHEN THE DRIVER RECEIVES RS-232 SIGNAL.
- GREEN LED DS6 WILL BE ON WHEN THE DRIVER TRANSMITS RS-232 SIGNAL.
- GREEN LED DS7 INDICATES THAT THE DRIVER HAS POWER.

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2003 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: 16 COL. MASC DRIVER SPECIFICATION

DES. BY: CBRECZI

DRAWN BY: CBRECZI

DATE: 05 MAR 03

REVISION

APPR. BY:

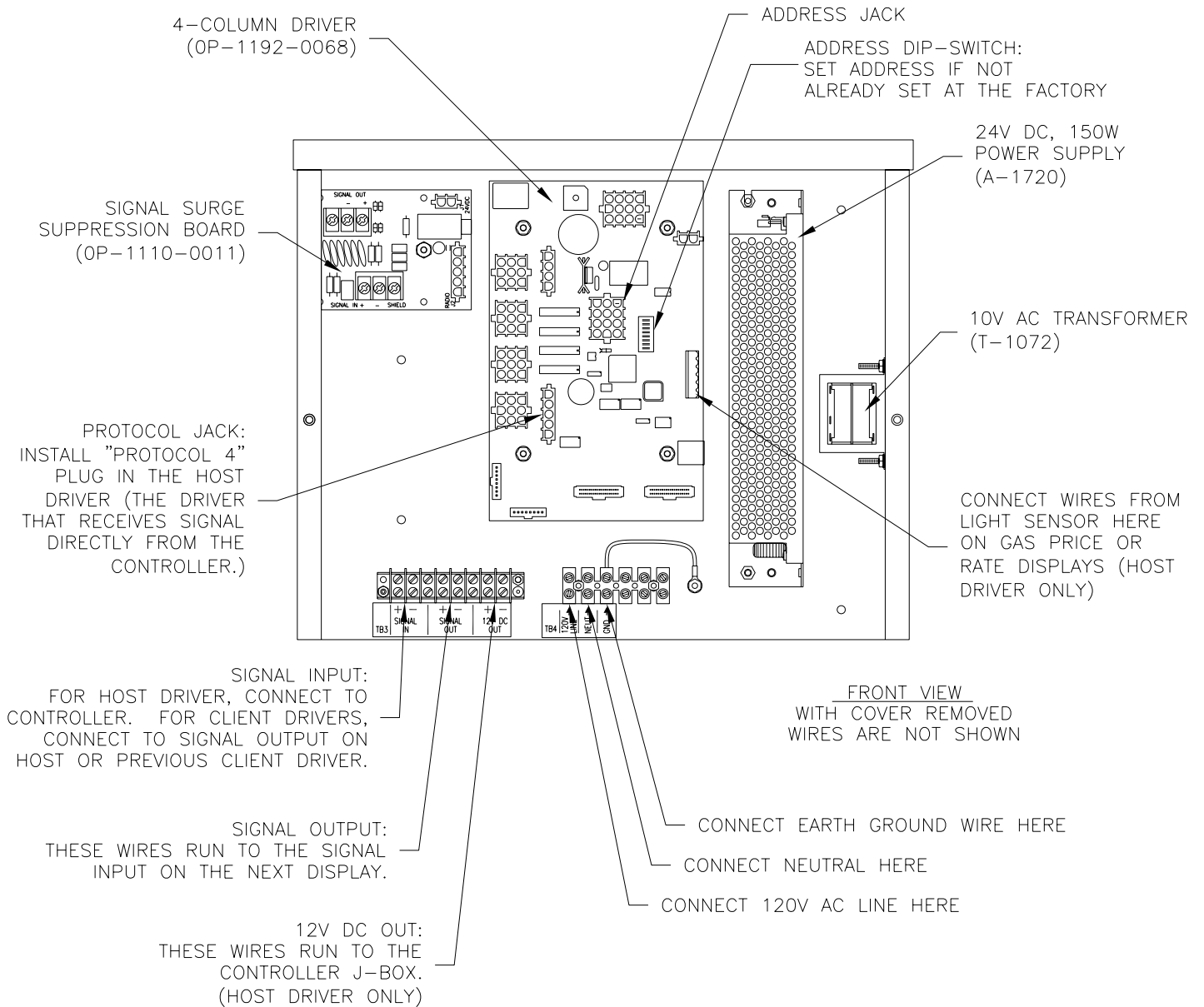
02

SCALE: 1=3

1192-R07A-184475

REV.	DATE	DESCRIPTION	BY	APPR.
02	22 NOV 04	CHANGED NOTES RELATING TO LED FUNCTIONS.	AVB	
01	9 SEP 04	EDITED TEXT TO INCLUDE ADDRESS DIP-SWITCH	JMC	

THIS IS THE ENCLOSED 4-COLUMN DRIVER USED IN MOST DATETIME LED DISPLAYS WITH 13", 18" AND 24" DIGITS.

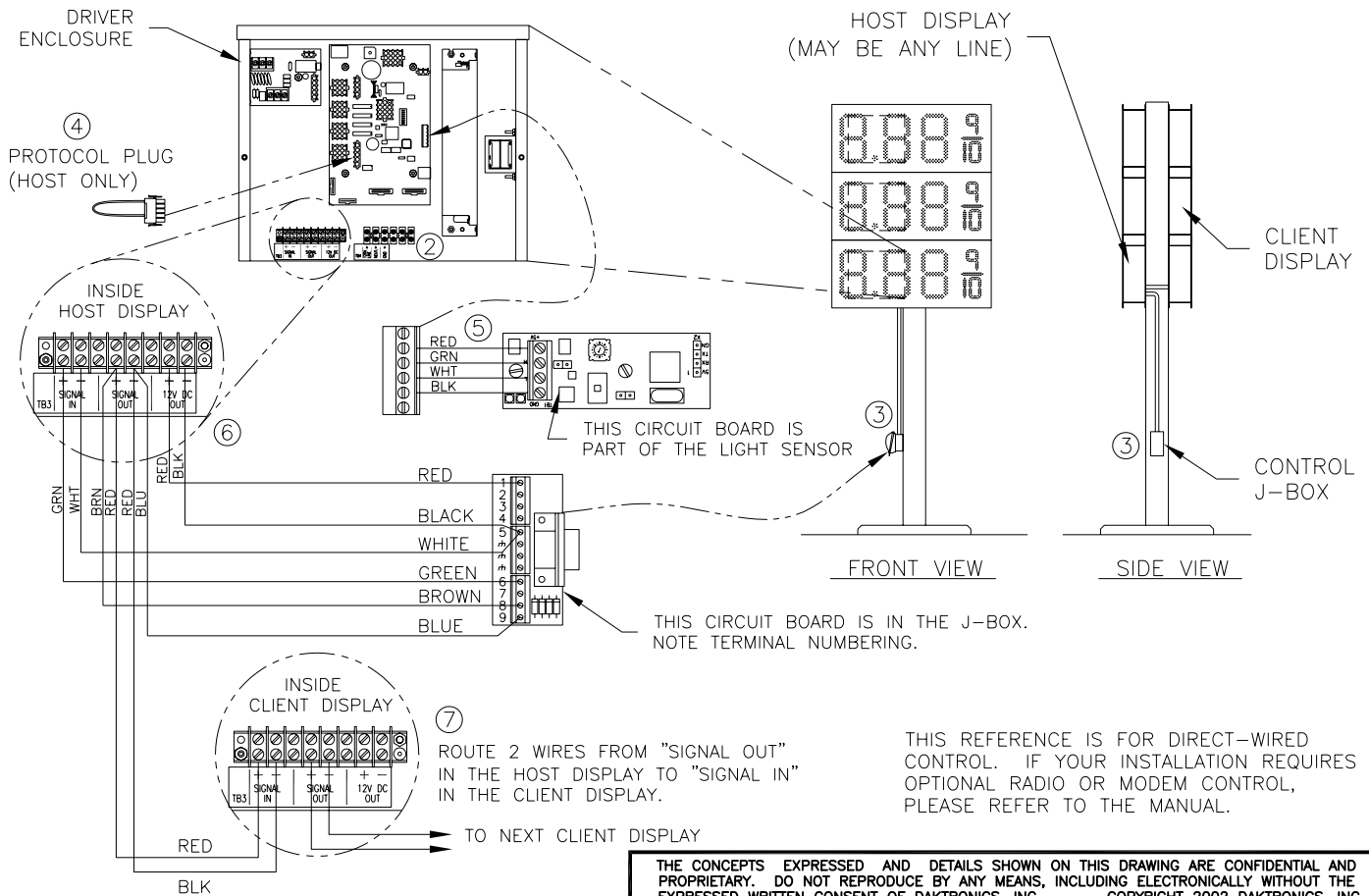


DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DATETIME LED DISPLAYS			
TITLE: ENCLOSED DRIVER, 4 COLUMN REFERENCE			
DES. BY: AVB		DRAWN BY: A VANBEMMEL	
		DATE: 13 mar 03	
REVISION	APPR. BY:	1279-R04A-184918	
02	SCALE: 1=4		

REV.	DATE	DESCRIPTION	BY	APPR.
02	9 SEP 04	EDITED ADDRESSING TEXT TO INCORPORATE ADDRESS DIP-SWITCH	JMC	
01	07 MAY 03	ADDED 10V TRANSFORMER	AVB	

BASIC INSTALLATION PROCEDURE (SOME STEPS ARE INDICATED BY CIRCLED NUMBERS ON THE DRAWING)

1. MOUNT THE DISPLAY TO THE STRUCTURE OR GREATER SIGN.
2. PROVIDE 120V AC POWER TO THE SIGN. EACH DISPLAY SECTION WILL REQUIRE POWER. CONNECT 120V AC POWER WIRES TO THE POWER TERMINALS IN THE DRIVER ENCLOSURE OF EACH DISPLAY.
3. MOUNT THE CONTROL J-BOX NEAR THE BOTTOM OF A SUPPORT POLE, OR INSTALL THE INDOOR J-BOX INSIDE THE BUILDING. OUTDOOR J-BOX IS SHOWN.
4. IF MORE THAN ONE DISPLAY IS INSTALLED IN THE SIGN, SELECT WHICH DISPLAY IS TO BE THE HOST BY INSERTING THE 5-PIN "PROTOCOL 4" PLUG INTO THE MATING JACK (J20) ON THE DRIVER. IF THERE IS ONLY ONE DISPLAY, IT IS TO BE SET UP TO BE A HOST. ANY OTHER DISPLAYS ON THE SIGN ARE CLIENTS. DO NOT INSTALL A PROTOCOL PLUG IN THE DRIVER IN A CLIENT DISPLAY.
5. MOUNT THE LIGHT SENSOR INSIDE THE HOST DISPLAY'S FACE PANEL, AND CONNECT THE SENSOR'S CABLE TO THE 6-PIN JACK IN THE DRIVER ENCLOSURE.
6. ROUTE SIGNAL CABLE (6 COND, 18 AWG) IN CONDUIT FROM THE CONTROL J-BOX TO THE SIGN AND CONNECT TO THE TERMINALS IN THE HOST DISPLAY. CONNECT TO "SIGNAL IN", SIGNAL OUT", AND "12V DC OUT" TERMINALS. NOTE: THE "12V DC OUT" TERMINALS ARE NOT USED WITH THE INDOOR J-BOX.
7. ROUTE SIGNAL WIRES (1 PAIR, 22 AWG) FROM THE HOST DISPLAY TO THE CLIENT DISPLAY(S). CONNECT FROM "SIGNAL OUT" ON THE HOST TO "SIGNAL IN" ON THE FIRST CLIENT. FOR ADDITIONAL CLIENT DISPLAYS, CONNECT "SIGNAL OUT" ON THE FIRST CLIENT TO "SIGNAL IN" ON THE NEXT CLIENT, AND SO ON UNTIL ALL CLIENTS ARE CONNECTED.
8. TURN ON THE POWER TO THE SIGN. THE DISPLAY WILL GO THROUGH A SELF-TEST CYCLE AND THEN THE MESSAGE "E4" SHOULD SHOW ON THE DIGITS OF THE HOST DISPLAY. THIS MEANS THAT NO DATA HAS BEEN LOADED INTO THE DISPLAY FROM THE CONTROLLER.
9. CONNECT THE DATAMASTER 100 CONTROLLER TO THE J-BOX AND SELECT THE "PRICE DISPLAY" OPTION. OPERATE THE CONTROLLER ACCORDING TO THE DM-100 CONTROLLER REFERENCE, ED-13960, TO SET THE GAS PRICE DATA. DISCONNECT THE CONTROLLER AND CLOSE THE J-BOX WHEN PROGRAMMING IS COMPLETE.



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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DATAMASTER LED DISPLAYS			
TITLE: QUICK INSTALL, DF-1020 GAS PRICE DISPLAYS			
DES. BY: AVB		DRAWN BY: A VANBEMMEL	
		DATE: 06 JUN 03	
REVISION	APPR. BY:	1279-R04A-189768	
01	SCALE: NONE		

01	06 APR 05	CHANGED STEP 6, ADDED WIRES TO VIEW.	ATP	
REV.	DATE	DESCRIPTION	BY	APPR.

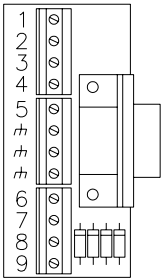
SERVER/CLIENT RADIO CONTROL

NOTE 'A':
 OA-1279-0203, INTERNAL LIGHT
 SENSOR INCLUDED ON SOME MODELS.
 REFER TO MANUAL FOR DETAILS.

OA-1146-0078
 CLIENT RADIO, INSTALLED AT DISPLAY
 W/ 6 PIN ADAPTOR CABLE, 25'

J-BOX TO DISPLAY WIRING TABLE

9-PIN J-BOX		HOST DISPLAY TB3, DRV ENCLOSURE	
WIRE PIN#	COLOR	FUNCTION	PIN#
1	RED	12VDC-P	7
5	BLK	GND-N	8
6	GRN	SIGNAL-P	1
5	WHT	SIGNAL-N	2



THIS CIRCUIT BOARD IS LOCATED
 IN THE 9-PIN J-BOX.
 NOTE THE TERMINAL NUMBERING.

INSTALLATION PER LOCAL
 CODE, IN CONDUIT WHERE
 REQUIRED, BY CUSTOMER.
 FOR PWR REQUIREMENTS,
 REFER TO MANUAL.

1, 2 PAIR, 22AWG CABLE,
 (W-1234) IN CONDUIT
 WHERE REQUIRED.

OA-1196-0093
 OUTDOOR J-BOX,
 AT BASE OF HOST
 DISPLAY

DATA TIME DISPLAY
 HOST

1, 2 PAIR, 22AWG CABLE,
 (W-1234) IN CONDUIT
 WHERE REQUIRED.

DATA TIME DISPLAY
 CLIENT

INSTALLATION PER LOCAL
 CODE, IN CONDUIT WHERE
 REQUIRED, BY CUSTOMER.
 FOR PWR REQUIREMENTS,
 REFER TO MANUAL.

OA-1146-0079
 SERVER RADIO, INSTALLED EXTERNAL TO
 BUILDING WITH CLEAR LINE OF SIGHT
 TO THE CLIENT RADIO.

1, 6 COND, 18 AWG, CABLE (W-1370)
 @500' MAX., PROVIDED BY DAKTRONICS.
 CONDUIT, IF REQUIRED, BY CUSTOMER.

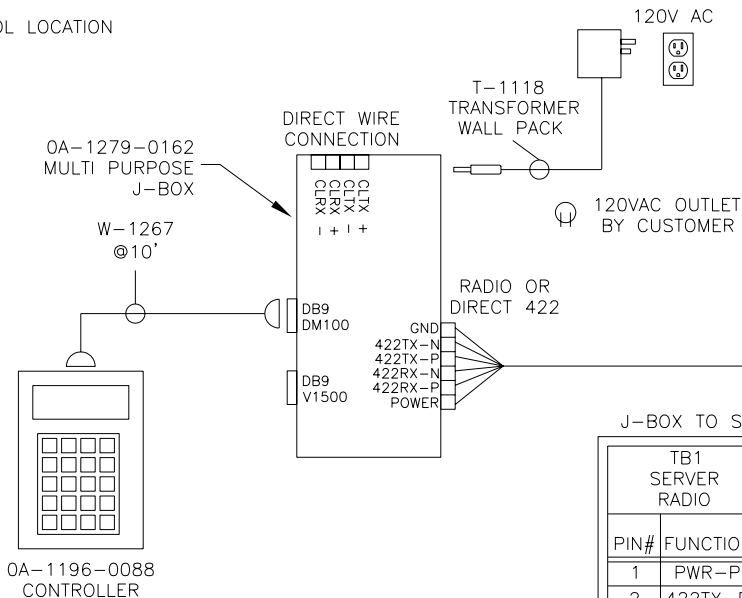
INSTALL "PROTOCOL 4" PLUG TO THE
 DRIVER IN THE HOST DISPLAY THAT IS
 CONNECTED TO THE RADIO CLIENT.

REFER TO DRAWING
 1279-R03A-165028 FOR DRIVER
 ENCLOSURE SCHEMATIC.

DAKTRONICS IS NOT RESPONSIBLE FOR
 THE QUALITY OF POWER OR
 GROUNDING TO DISPLAYS.

DAKTRONICS IS NOT RESPONSIBLE FOR
 ANY EXTERNAL INTERFERENCE THAT MAY
 AFFECT THE RADIO COMMUNICATIONS.

CONTROL LOCATION



J-BOX TO SERVER RADIO WIRING TABLE

TB1 SERVER RADIO		W-1370	TB1 MULTI-PURPOSE CONV. J-BOX	
PIN#	FUNCTION	COLOR	FUNCTION	PIN#
1	PWR-P	RED	PWR-P	1
2	422TX-P	WHT	422RX-P	2
3	422TX-N	GRN	422RX-N	3
4	422RX-P	BRN	422TX-P	4
5	422RX-N	BLU	422TX-N	5
6	GND-N	BLK	GND-N	6

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA TIME LED DISPLAYS

TITLE: SYSTEM RISER DIAGRAM; DATATIME, SERVER/CLIENT SETUP

DES. BY: MMILLER

DRAWN BY: MMILLER

DATE: 12 NOV 03

REVISION

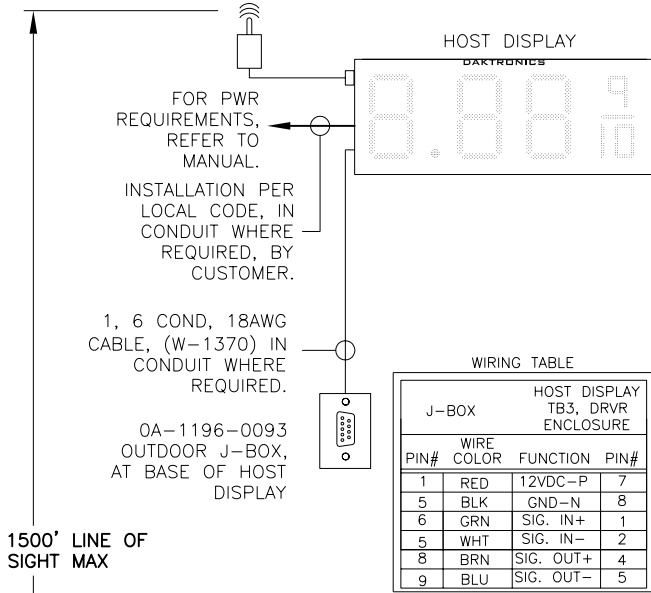
APPR. BY:

SCALE: NONE

1279-R01A-199834

REV.	DATE	DESCRIPTION	BY	APPR.
00				

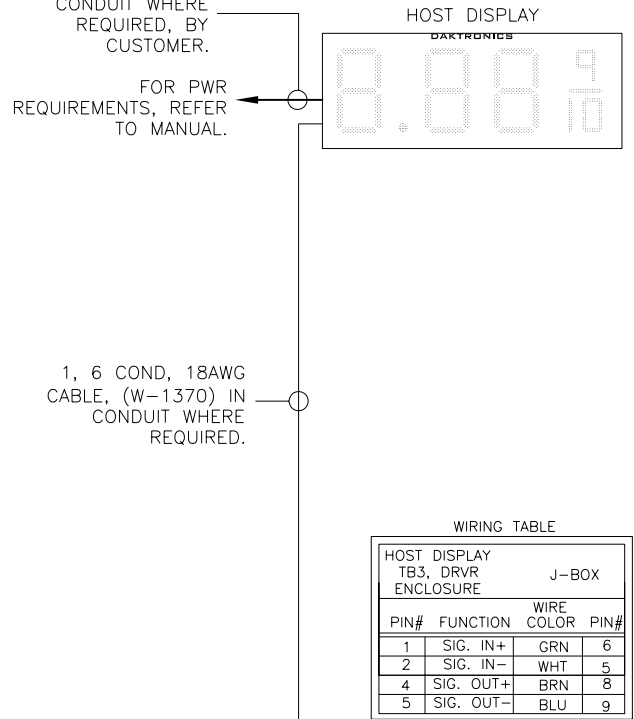
0A-1146-0078
CLIENT RADIO, INSTALLED AT DISPLAY
W/ 6 PIN ADAPTOR CABLE, 25'



INSTALLATION PER LOCAL CODE, IN CONDUIT WHERE REQUIRED, BY CUSTOMER.

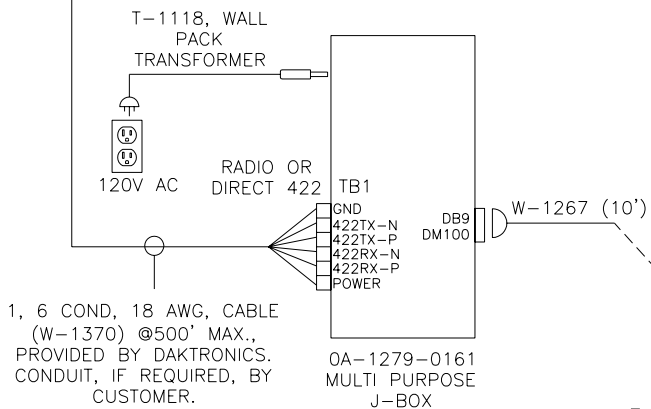
FOR PWR REQUIREMENTS, REFER TO MANUAL.

1, 6 COND, 18AWG CABLE, (W-1370) IN CONDUIT WHERE REQUIRED.



0A-1146-0079
SERVER RADIO, INSTALLED EXTERNAL TO BUILDING WITH CLEAR LINE OF SIGHT TO THE CLIENT RADIO.

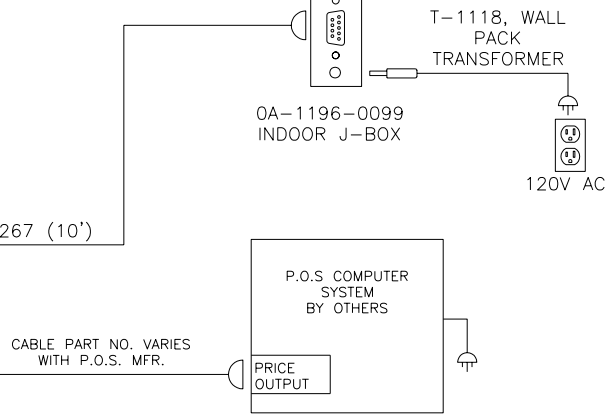
RADIO OPTION DIRECT WIRE OPTION



J-BOX		W-1370		SERVER	
PIN#	FUNCTION	COLOR	FUNCTION	PIN#	
1	PWR-P	RED	PWR-P	1	
2	422RX-P	WHT	422TX-P	2	
3	422RX-N	GRN	422TX-N	3	
4	422TX-P	BRN	422RX-P	4	
5	422TX-N	BLU	422RX-N	5	
6	GND-N	BLK	GND-N	6	

OM-200082 MOUNTING BRACKET (OPTIONAL)

0A-1196-0133 CONTROLLER



INSTALL "PROTOCOL 4" PLUG IN THE DRIVER IN THE HOST DISPLAY THAT IS CONNECTED TO THE RADIO CLIENT.

REFER TO DRAWING 1279-R03A-165028 FOR DRIVER ENCLOSURE SCHEMATIC.

DAKTRONICS IS NOT RESPONSIBLE FOR THE QUALITY OF POWER OR GROUNDING TO DISPLAYS.

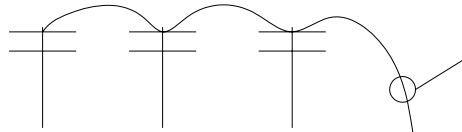
DAKTRONICS IS NOT RESPONSIBLE FOR ANY EXTERNAL INTERFERENCE THAT MAY AFFECT THE RADIO COMMUNICATIONS.

REV.	DATE	DESCRIPTION	BY	APPR.
04	06 APR 05	REVISED WIRING TABLES, CHANGED SOME CABLES.	ATP	
03	07 OCT 04	ADDED LINE OF SIGHT NOTE	RT	
02	04 MAY 05	CHANGED A FEW DETAILS TO MAKE THE DRAWING MORE GENERIC.	AVB	
01	19 DEC 03	UPDATED DETAILS OF CONTROLLER AND CABLE PART NUMBERS.	MWM	

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: DATA TIME LED DISPLAYS	
TITLE: SYSTEM RISER DIAGRAM; POINT OF SALE CONFIGURATION	
DES. BY: MMILLER	DRAWN BY: MMILLER DATE: 20 NOV 03
REVISION 04	APPR. BY: NONE SCALE: NONE
1279-R01A-200195	

MODEM CONTROL

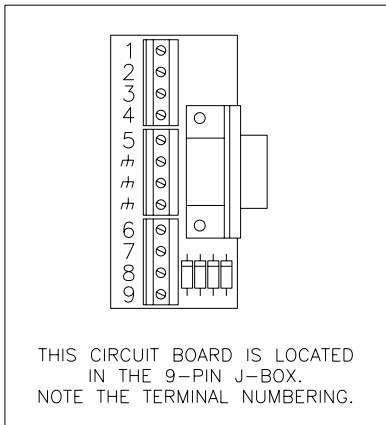
NOTE 'A':
 OA-1279-0203, INTERNAL LIGHT
 SENSOR INCLUDED ON SOME MODELS.
 REFER TO MANUAL FOR DETAILS.



DEDICATED TELEPHONE LINE TO
 INTERNAL MODEM IN HOST DISPLAY.
 REFER TO A-177039 FOR INTERNAL
 DETAILS. ALL RESPONSABILITIES BY
 OTHERS.

J-BOX TO DISPLAY WIRING TABLE

9-PIN J-BOX		HOST DISPLAY TB3, DRV ENCLOSURE	
WIRE PIN#	COLOR	FUNCTION	PIN#
1	RED	12VDC-P	7
5	BLK	GND-N	8
6	GRN	SIGNAL-P	1
5	WHT	SIGNAL-N	2



INSTALLATION PER LOCAL
 CODE, IN CONDUIT WHERE
 REQUIRED, BY CUSTOMER.
 FOR PWR REQUIREMENTS,
 REFER TO MANUAL.



1, 2 PAIR, 22AWG CABLE,
 (W-1234) IN CONDUIT
 WHERE REQUIRED.



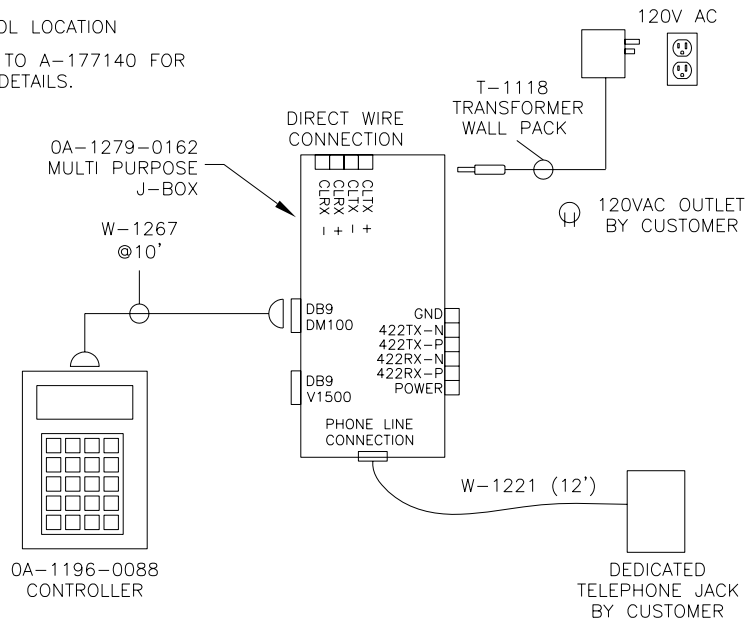
1, 2 PAIR, 22AWG CABLE,
 (W-1234) IN CONDUIT
 WHERE REQUIRED.

OA-1196-0093
 OUTDOOR J-BOX,
 AT BASE OF HOST
 DISPLAY

INSTALLATION PER LOCAL
 CODE, IN CONDUIT WHERE
 REQUIRED, BY CUSTOMER.
 FOR PWR REQUIREMENTS,
 REFER TO MANUAL.

CONTROL LOCATION

REFER TO A-177140 FOR
 MORE DETAILS.



INSTALL "PROTOCOL 4" PLUG TO THE
 DRIVER IN THE HOST DISPLAY THAT IS
 CONNECTED TO THE RADIO CLIENT.

DAKTRONICS IS NOT RESPONSIBLE FOR
 THE QUALITY OF POWER OR
 GROUNDING TO DISPLAYS.

ALL DISPLAYS MUST BE GROUNDED PER
 ARTICLE 250 AND 600 OF THE
 NATIONAL ELECTRICAL CODE WITH NO
 MORE THAN 10 OHMS GROUND
 RESISTANCE.

DAKTRONICS IS NOT RESPONSIBLE FOR
 TELEPHONE CONNECTIONS, OR
 DEDICATED LINES REQUIRED.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA TIME LED DISPLAYS

TITLE: SYSTEM RISER DIAGRAM; DATATIME, MODEM SETUP

DES. BY: MMILLER

DRAWN BY: MMILLER

DATE: 02 DEC 03

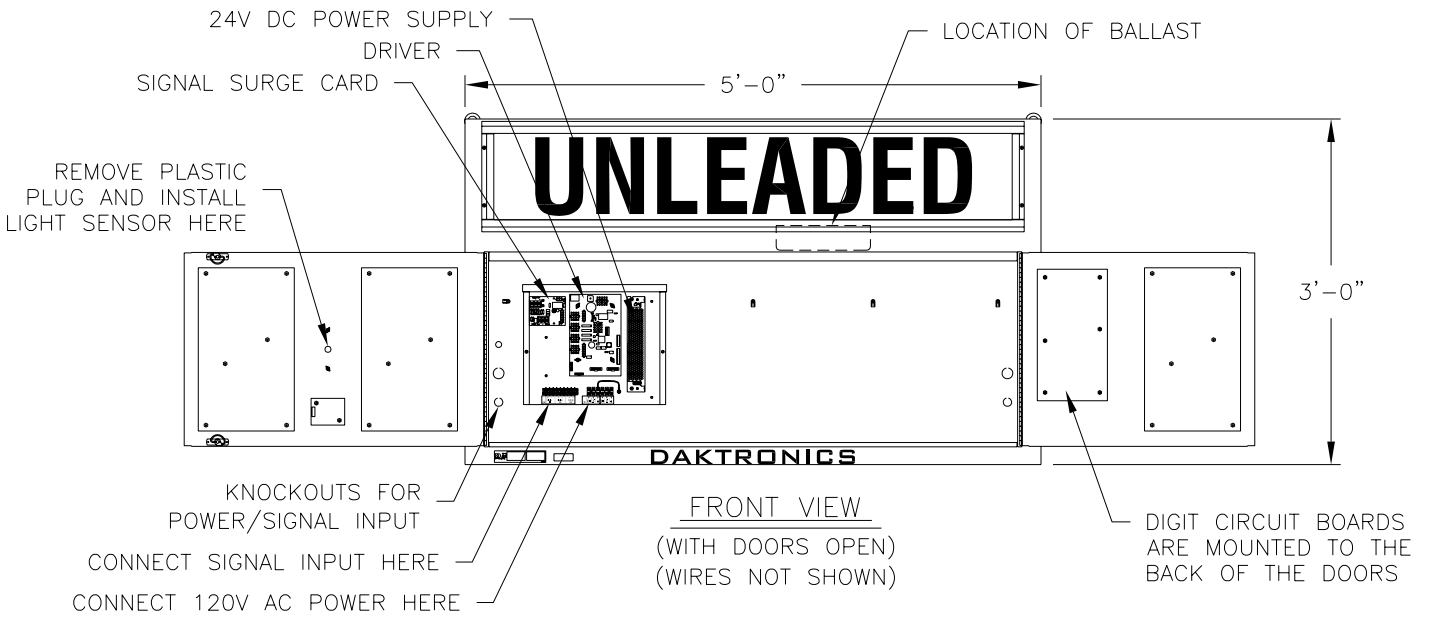
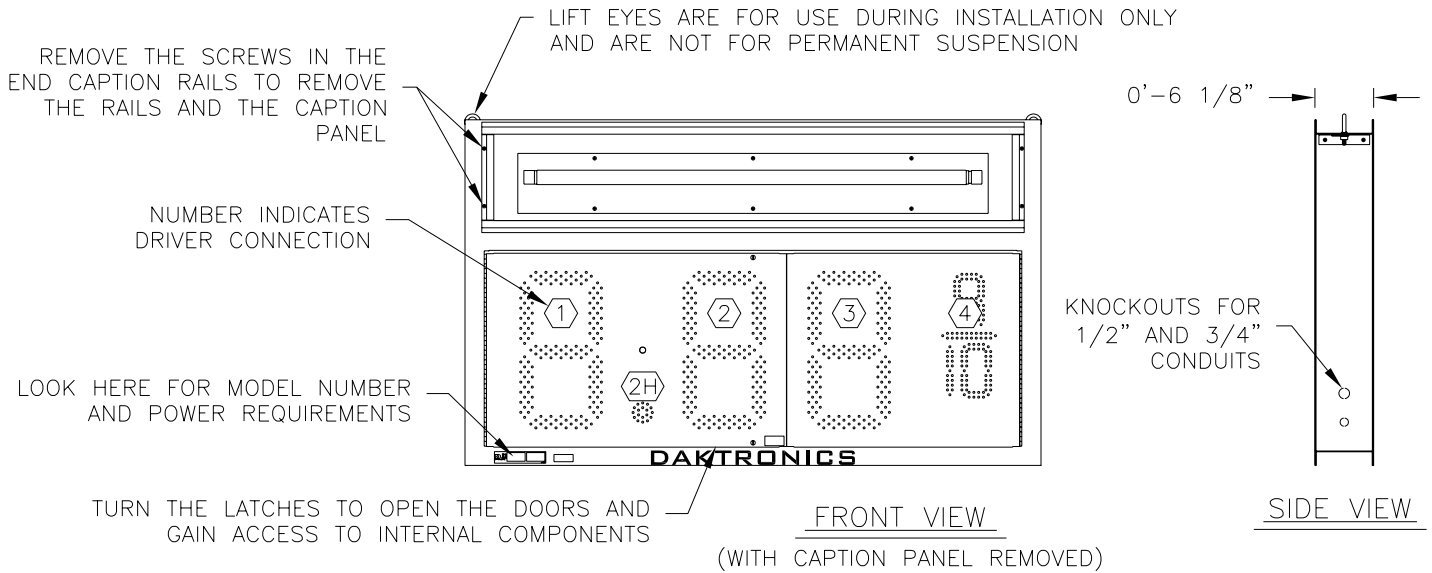
REVISION

APPR. BY:

SCALE: NONE

1279-R01A-200552

REV.	DATE	DESCRIPTION	BY	APPR.
00				



POWER REQUIREMENT: 120V AC, 1.3 AMPS
PROVIDE A 120V AC, 15 AMP CIRCUIT

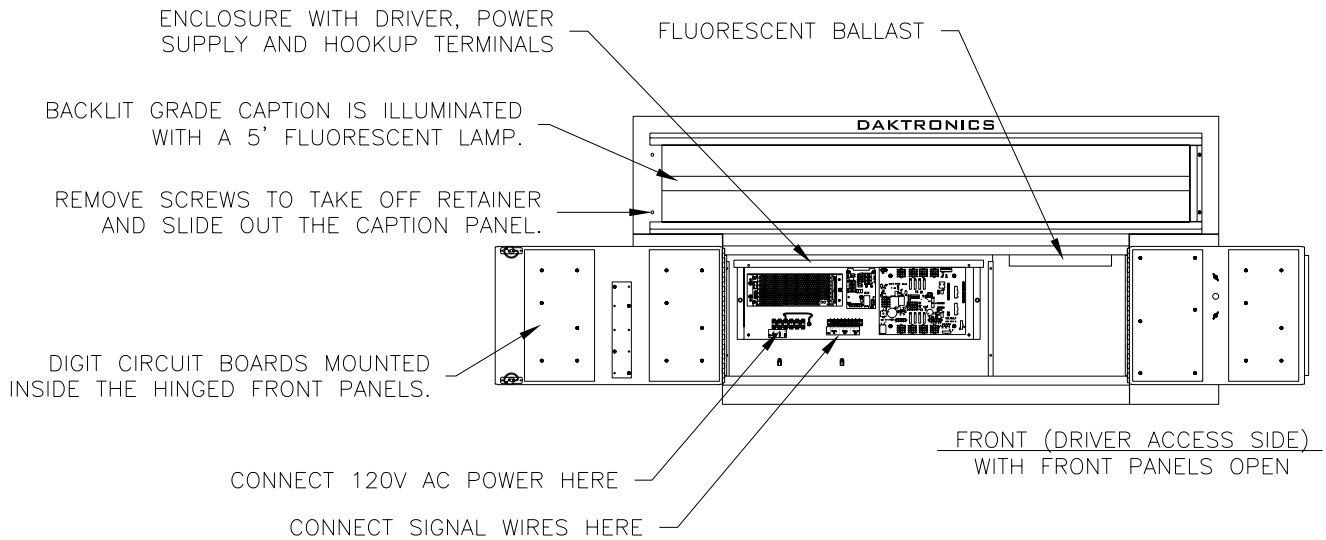
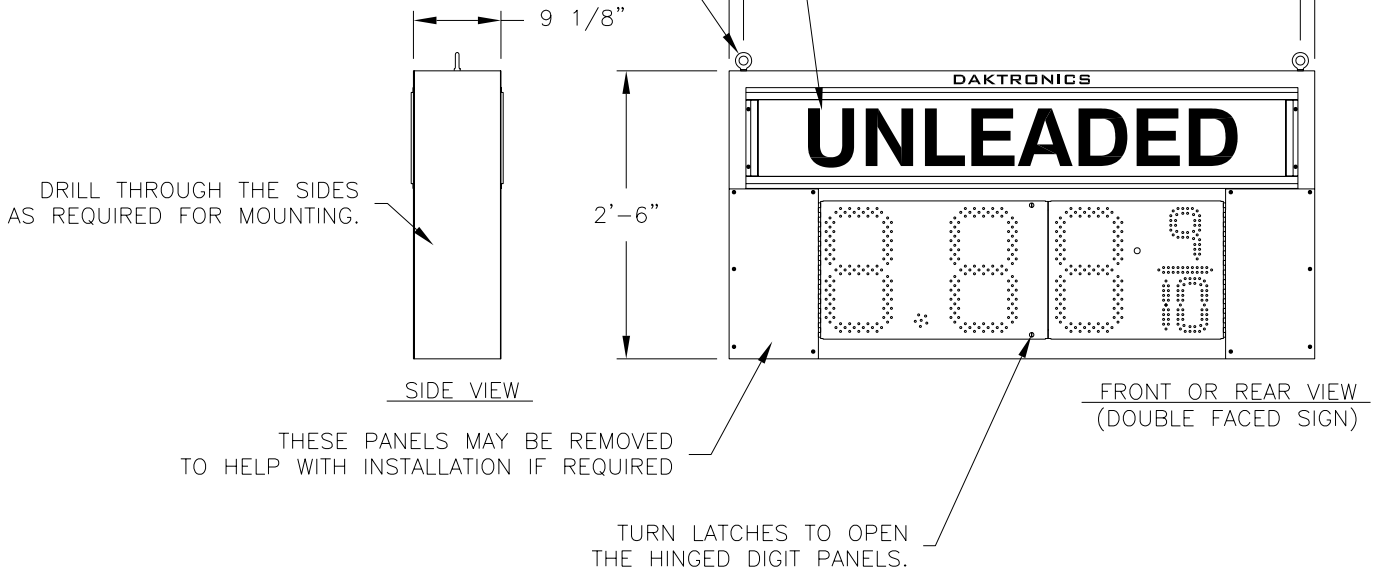
ESTIMATED WEIGHT: 60 LBS [27 KGS]

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2004 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: SHOP DRAWING, DF-1024-18			
DES. BY:		DRAWN BY: M LEOPOLD	
		DATE: 28 JUN 04	
REVISION	APPR. BY:	1319-R04A-215188	
02	SCALE: 1=20		

02	21 JUL 05	UPDATED DIGIT PANELS PER DESIGN CHANGES.	MGL	
01	30 DEC 04	CHANGED MODEL NUMBER FROM DF-1212-18 TO DF-1024-18.	MGL	
REV.	DATE	DESCRIPTION	BY	APPR.

EYEBOLTS ARE FOR TEMPORARY LIFTING DURING INSTALLATION, AND ARE MAY NOT BE USED FOR PERMANENT SUSPENSION. IF EYEBOLTS ARE REMOVED AFTER INSTALLATION, THREAD IN 3/8-16 BOLTS TO FILL THE HOLES.

GRADE CAPTION LETTERS ARE WHITE WITH BLACK BACKGROUND, UNLESS SPECIFIED OTHERWISE.



DIGITS ARE 13" NOMINAL HEIGHT.
 DIGIT LEDS MAY BE RED, AMBER, OR GREEN; TO BE SPECIFIED AT TIME OF ORDER.
 LETTERS IN BACKLIT GRADE CAPTION ARE 6" HIGH.

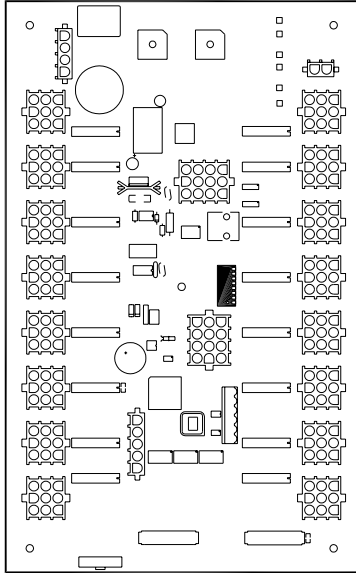
CABINET IS EXTRUDED ALUMINUM CHANNEL, 0.100" THICK. FRONT AND REAR MEMBERS ARE ALUMINUM SHEET, 0.063" THICK. ESTIMATED WEIGHT IS ABOUT 100 LBS.

MAX. POWER CONSUMPTION IS ABOUT 350 WATTS. PROVIDE A 120V AC, 15 AMP CIRCUIT FOR POWER.

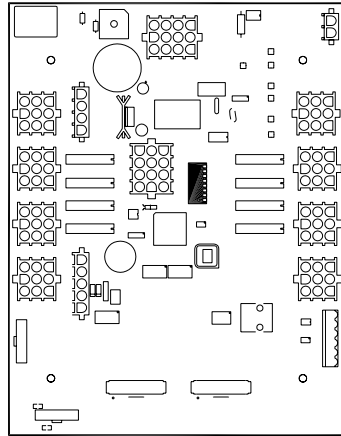
CONTROL CONNECTION REQUIRES TWO-PAIR CABLE, 22 AWG.

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2004 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: GAS PRICE DISPLAYS			
TITLE: SHOP DRAWING, DF-1221			
DES. BY: AVB		DRAWN BY: A VANBEMMEL	
DATE: 03 NOV 04			
REVISION	APPR. BY:	1319-R04A-226796	
01	SCALE: 1=20		

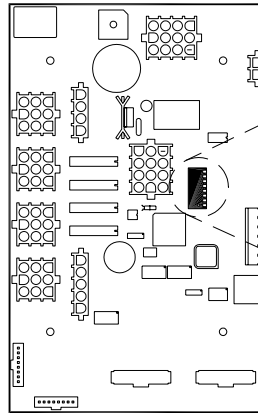
01	20 JUL 05	UPDATED DIGIT PANELS PER DESIGN CHANGES.	MGL	
REV.	DATE	DESCRIPTION	BY	APPR.



16-COLUMN DRIVER



8-COLUMN DRIVER



4-COLUMN DRIVER

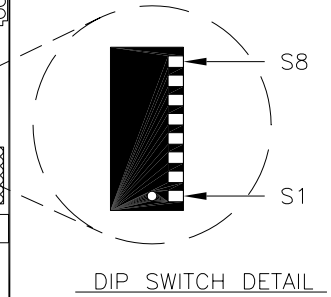


TABLE KEY:

SWITCH IS DOWN (ON)	●
SWITCH IS UP (OFF)	○

SETTING THE ADDRESS:

THE "DIP" SWITCH IS A DEVICE WITH EIGHT TINY SWITCHES, DESIGNATED AS S1 THROUGH S8.

THE LOCATION OF THE DIP SWITCH ON THE DRIVER IS SHOWN IN THE FIGURE ABOVE.

SET THE ADDRESS IN THIS DRIVER BY TURNING THE SWITCHES ON OR OFF, ACCORDING TO THE TABLE AT LEFT.

ADDRESS NUMBER	SWITCH NUMBER							
	S8	S7	S6	S5	S4	S3	S2	S1
1	○	○	○	○	○	○	○	●
2	○	○	○	○	○	○	●	○
3	○	○	○	○	○	○	●	●
4	○	○	○	○	○	●	○	○
65	○	●	○	○	○	○	○	●
66	○	●	○	○	○	○	●	○
67	○	●	○	○	○	○	●	●
68	○	●	○	○	○	●	○	○
81	○	●	○	●	○	○	○	●
82	○	●	○	●	○	○	●	○
83	○	●	○	●	○	○	●	●

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: DATA TIME LED DISPLAY

TITLE: ADDRESS SETTINGS, MASC DRIVERS

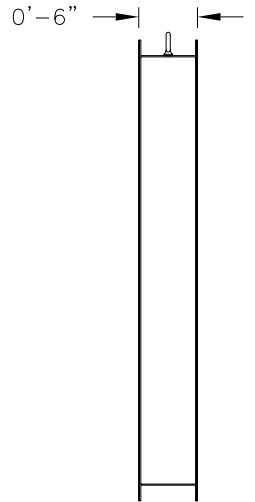
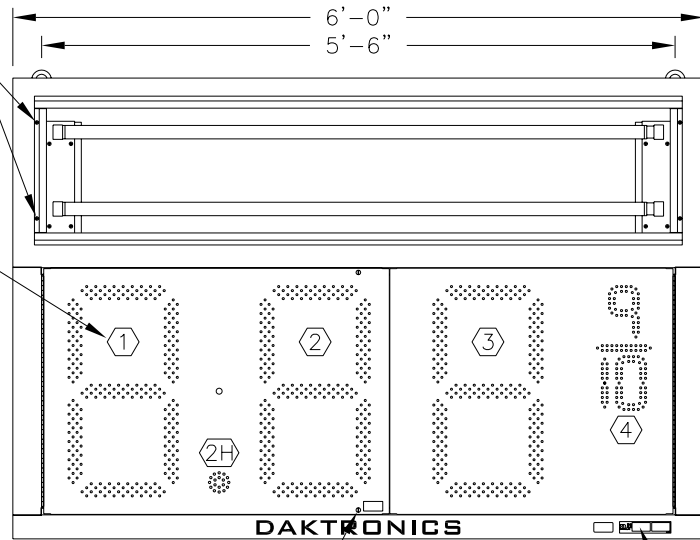
DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 11 NOV 04

REVISION	APPR. BY:	1279-R04A-227502
00	SCALE: NONE	

REV.	DATE	DESCRIPTION	BY	APPR.

REMOVE THE SCREWS IN THE END CAPTION RAILS TO REMOVE THE RAILS AND THE CAPTION PANEL.

NUMBER INDICATES DRIVER CONNECTION



TURN THE LATCHES TO OPEN THE DOORS AND GAIN ACCESS TO INTERNAL COMPONENTS.

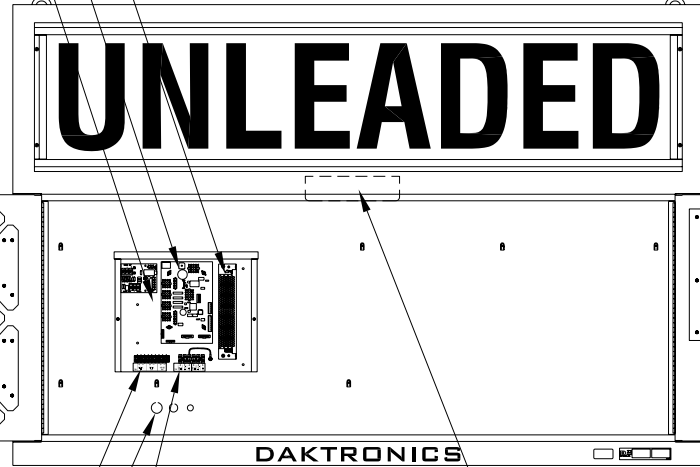
FRONT VIEW
(WITH CAPTION PANEL REMOVED)

LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS.

24V DC POWER SUPPLY
DRIVER
SIGNAL SURGE CARD

LIFT EYES ARE FOR USE DURING INSTALLATION ONLY AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

REMOVE THE PLASTIC PLUG AND INSTALL THE LIGHT SENSOR HERE.



DIGIT CIRCUIT BOARDS ARE MOUNTED TO THE BACK OF THE DOORS.

CONNECT SIGNAL INPUT HERE.

KNOCKOUTS FOR USE WITH 3/4" AND 1/2" CONDUITS.

CONNECT 120V AC POWER HERE.

FRONT VIEW
(WIRES NOT SHOWN)

LOCATION OF BALLAST

PROVIDE A 120V AC, 15 AMP CIRCUIT

ESTIMATED WEIGHT: 120 LBS [54 KGS]

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1024-24

DES. BY:

DRAWN BY: M LEOPOLD

DATE: 05 JAN 05

REV.	DATE	DESCRIPTION	BY	APPR.
01	22 JUL 05	UPDATED DIGIT PANELS PER DESIGN CHANGES.	MGL	

REVISION
01

APPR. BY:

SCALE: 1=20

1319-R04A-230936

REMOVE THE SCREWS IN THE END CAPTION RAILS TO REMOVE THE RAILS AND THE CAPTION PANEL.

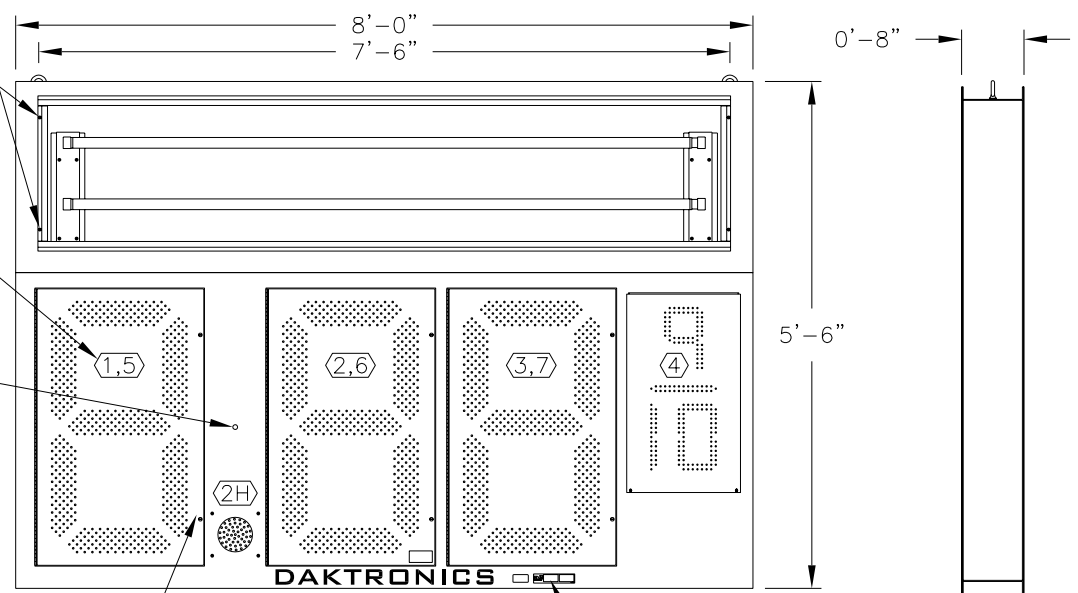
NUMBER INDICATES DRIVER CONNECTION

REMOVE THE PLASTIC PLUG AND INSTALL THE LIGHT SENSOR HERE.

TURN LATCHES TO OPEN DOORS AND GAIN ACCESS TO INTERNAL COMPONENTS.

FRONT VIEW
(WITH CAPTION PANEL REMOVED)

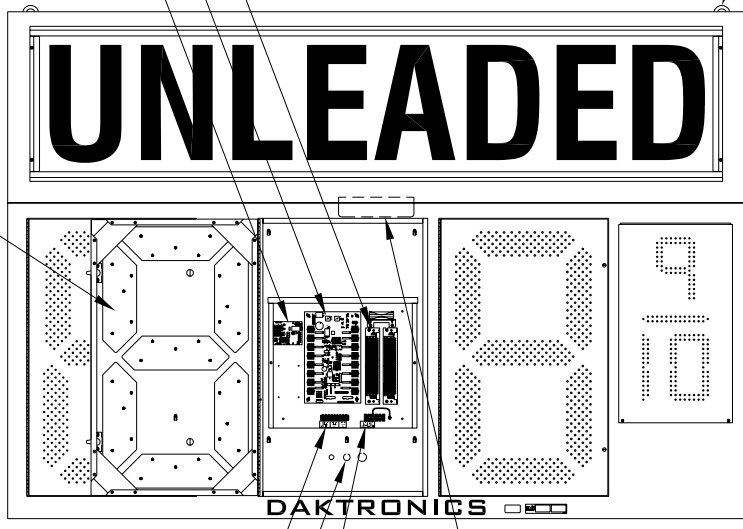
LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS.



24V DC POWER SUPPLY @2 DRIVER
SIGNAL SURGE CARD

LIFT EYES ARE FOR USE DURING INSTALLATION ONLY, AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

DIGIT CIRCUIT BOARDS ARE MOUNTED TO THE BACK OF THE DOORS.



CONNECT SIGNAL INPUT HERE.

KNOCKOUTS FOR USE WITH 3/4" AND 1/2" CONDUITS.

CONNECT 120V AC POWER HERE.

LOCATION OF BALLAST

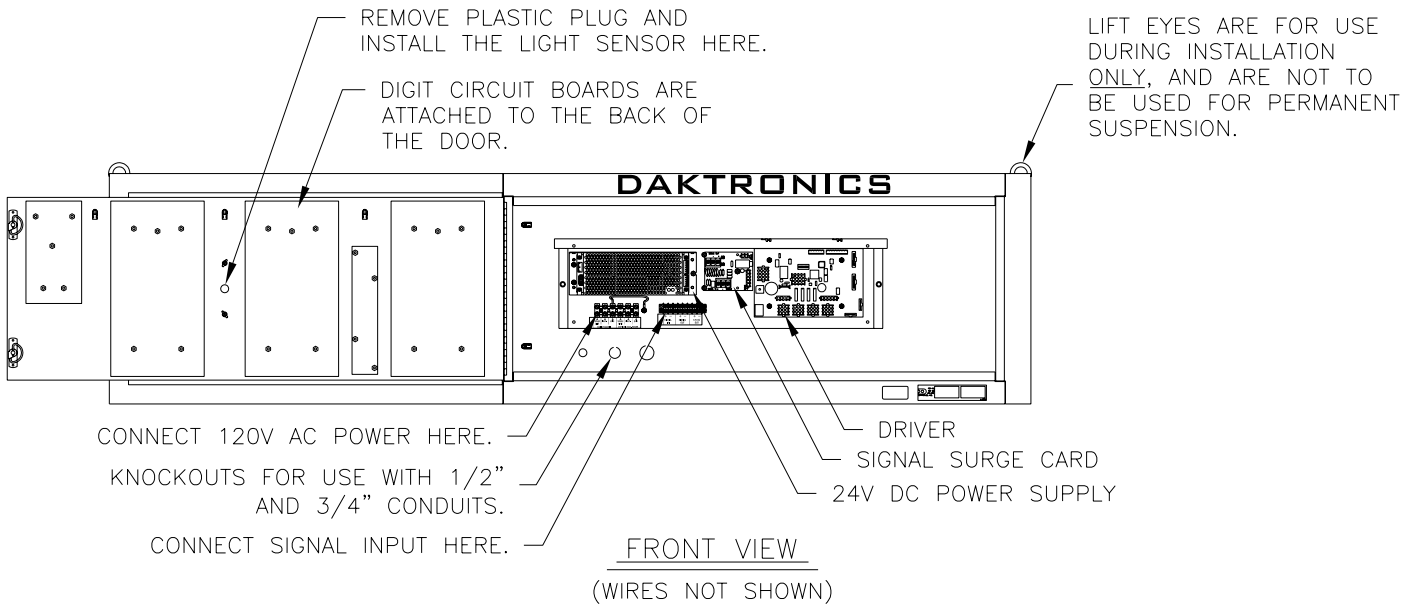
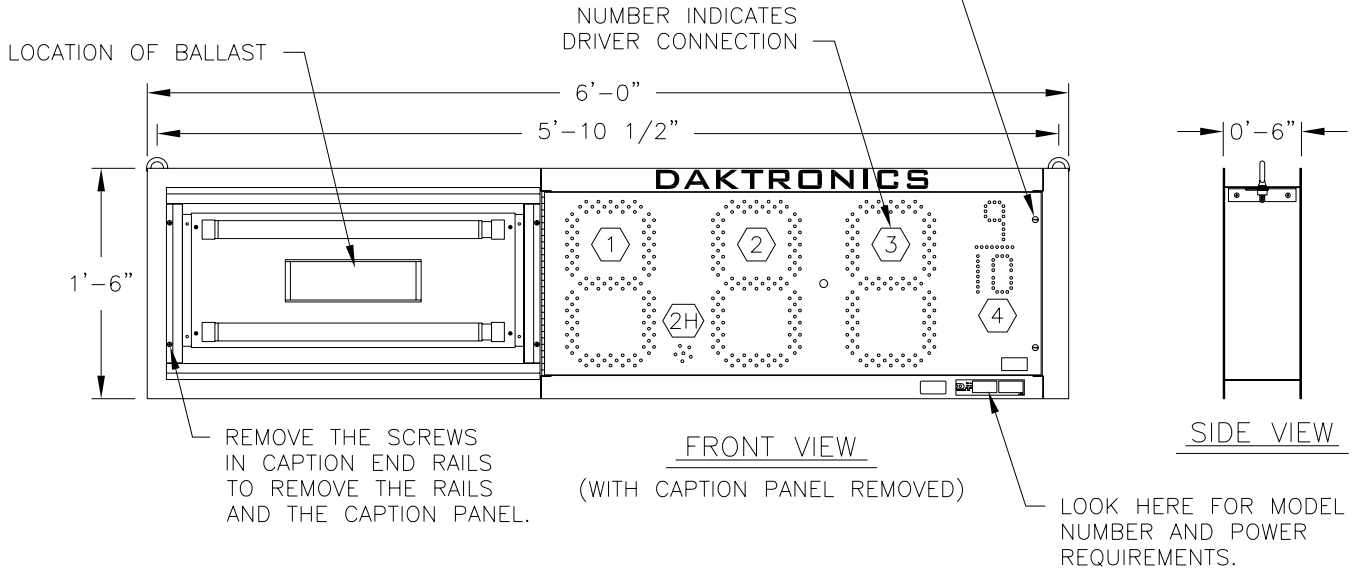
FRONT VIEW
(WIRES NOT SHOWN)

PROVIDE A 120V AC, 15 AMP CIRCUIT
ESTIMATED WEIGHT: 190 LBS [86 KGS]

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: GAS PRICE DISPLAYS			
TITLE: SHOP DRAWING, DF-1024-36			
DES. BY:		DRAWN BY: M LEOPOLD	
DATE: 05 JAN 04			
REVISION	APPR. BY:	1319-R04A-230946	
00	SCALE: 1=25		

REV.	DATE	DESCRIPTION	BY	APPR.

TURN THE LATCHES TO OPEN THE DOORS AND GAIN ACCESS TO INTERNAL COMPONENTS.



PROVIDE A 120V AC, 15 AMP CIRCUIT

ESTIMATED WEIGHT: 50 LBS [23 KGS]

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PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1026-13

DES. BY: M LEOPOLD

DRAWN BY: M LEOPOLD

DATE: 07 FEB 05

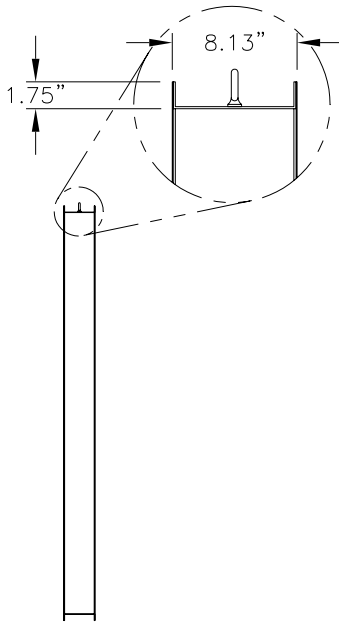
REVISION

APPR. BY:

SCALE: 1=15

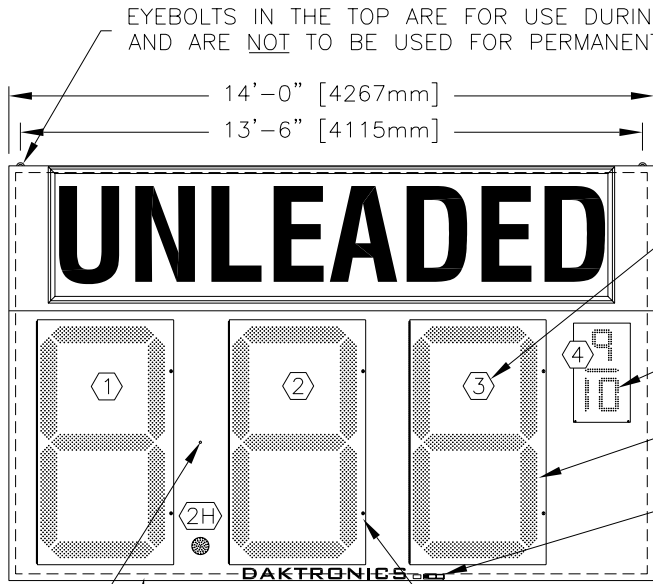
1319-R04A-232349

REV.	DATE	DESCRIPTION	BY	APPR.
00				



SIDE VIEW

LIGHT SENSOR FOR AUTOMATIC DIMMING (TO BE FIELD INSTALLED IN HOST DISPLAY ONLY)



FRONT VIEW

EYEBOLTS IN THE TOP ARE FOR USE DURING INSTALLATION ONLY AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

THE NUMBER ON EACH DIGIT INDICATES THE DRIVER CONNECTOR THAT CONTROLS THE DIGIT.

24" 9/10 DIGIT

60" DIGITS

LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS

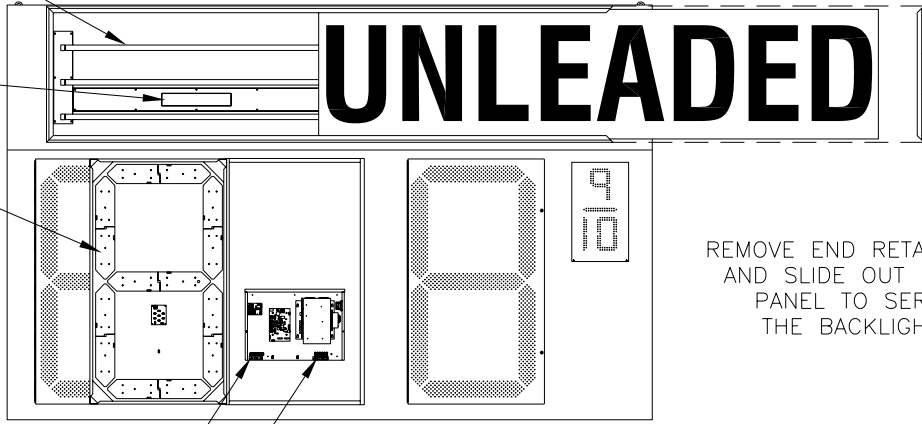
TURN THESE LATCHES TO OPEN HINGED DIGIT PANELS AND GAIN ACCESS TO INTERNAL COMPONENTS.

PERIMETER FRAME CHANNELS HAVE 1.75" FLANGES ALL AROUND THE DISPLAY. DRILL THROUGH THE REAR FLANGES TO MOUNT THE DISPLAY TO THE STRUCTURE.

6-FOOT FLUORESCENT LAMPS FOR CAPTION BACKLIGHTING

FLUORESCENT BALLAST

DIGIT CIRCUIT BOARDS ARE MOUNTED TO THE BACK OF THE DOORS



FRONT VIEW WITH ONE DOOR OPEN FOR DRIVER ACCESS

REMOVE END RETAINER AND SLIDE OUT FACE PANEL TO SERVICE THE BACKLIGHTING

CONNECT SIGNAL WIRES HERE
CONNECT 120V AC POWER HERE
TWO 15A CIRCUITS REQUIRED

POWER REQUIREMENT:

TWO 120V AC, 15 AMP CIRCUITS, ONE FOR THE DIGIT SECTION AND ONE FOR THE BACKLIT CAPTION.
MAX CURRENT IS ABOUT 8.3 AMPS FOR THE DIGITS, 5.3 AMPS FOR THE BACKLIT CAPTION.

ESTIMATED WEIGHT IS APPROXIMATELY 600 LBS. [272 KG]

DISPLAY CABINET IS CONSTRUCTED OF AN EXTRUDED ALUMINUM FRAME AND ALUMINUM SHEET. CAPTION FACE IS POLYCARBONATE.

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PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1024-60

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 26 JAN 05

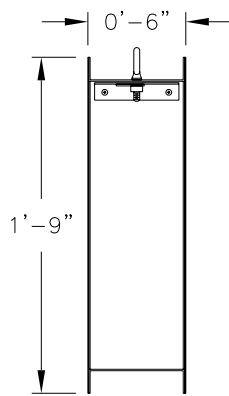
REVISION

APPR. BY:

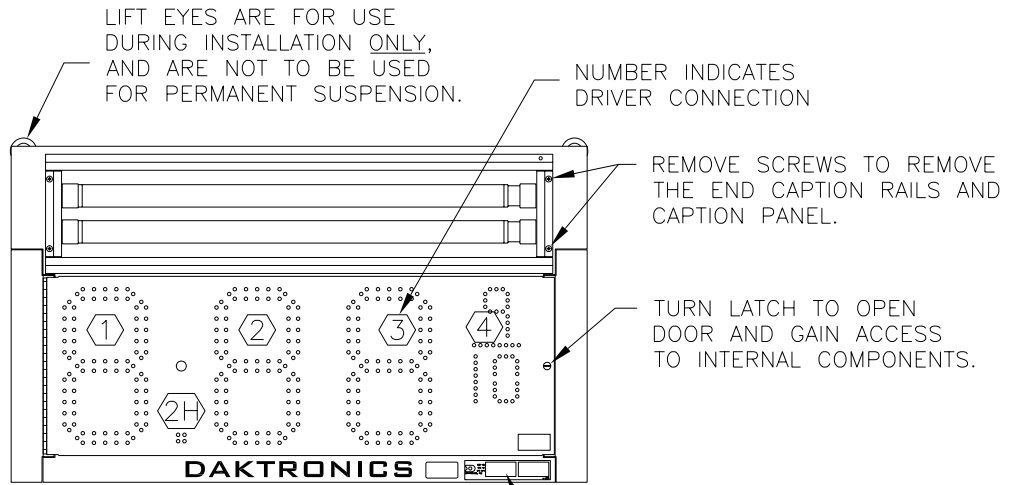
SCALE: 1=50

1319-R04A-232509

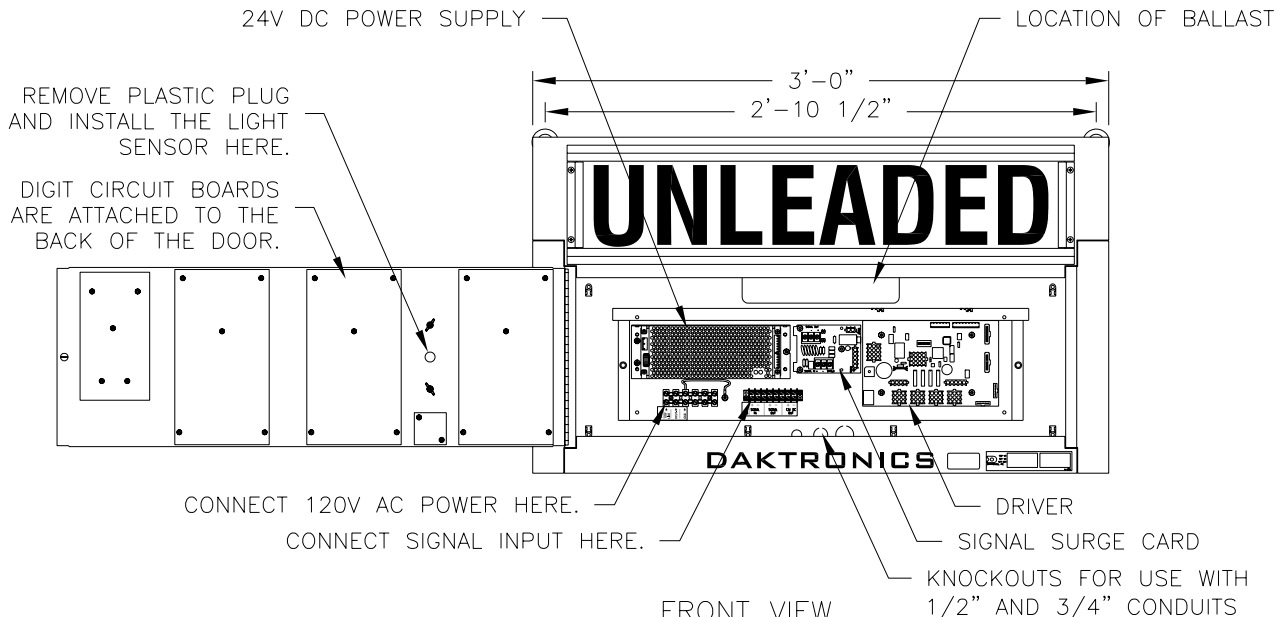
REV.	DATE	DESCRIPTION	BY	APPR.
00				



SIDE VIEW



FRONT VIEW
(WITH CAPTION PANEL REMOVED)



FRONT VIEW
(WIRES NOT SHOWN)

PROVIDE A 120V AC, 15 AMP CIRCUIT
ESTIMATED WEIGHT: 40 LBS [18 KGS]

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1024-10

DES. BY: M LEOPOLD

DRAWN BY: M LEOPOLD

DATE: 09 FEB 05

REV.	DATE	DESCRIPTION	BY	APPR.
01	26 MAY 05	REPLACED DOOR SCREWS WITH LATCH.	MGL	

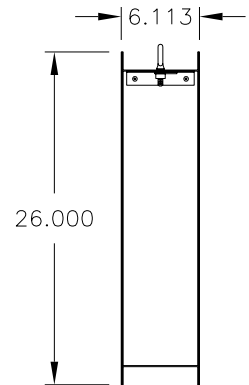
REVISION
01

APPR. BY:
SCALE: 1=12

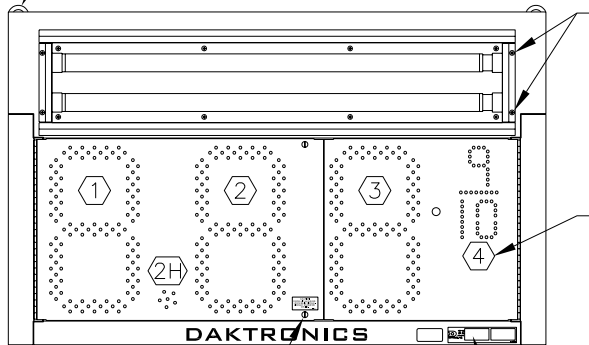
1319-R04A-233990

LIFT EYES ARE FOR USE DURING INSTALLATION ONLY, AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

REMOVE THE SCREWS IN THE END CAPTION RAILS TO REMOVE THE RAILS AND THE CAPTION PANEL.



SIDE VIEW



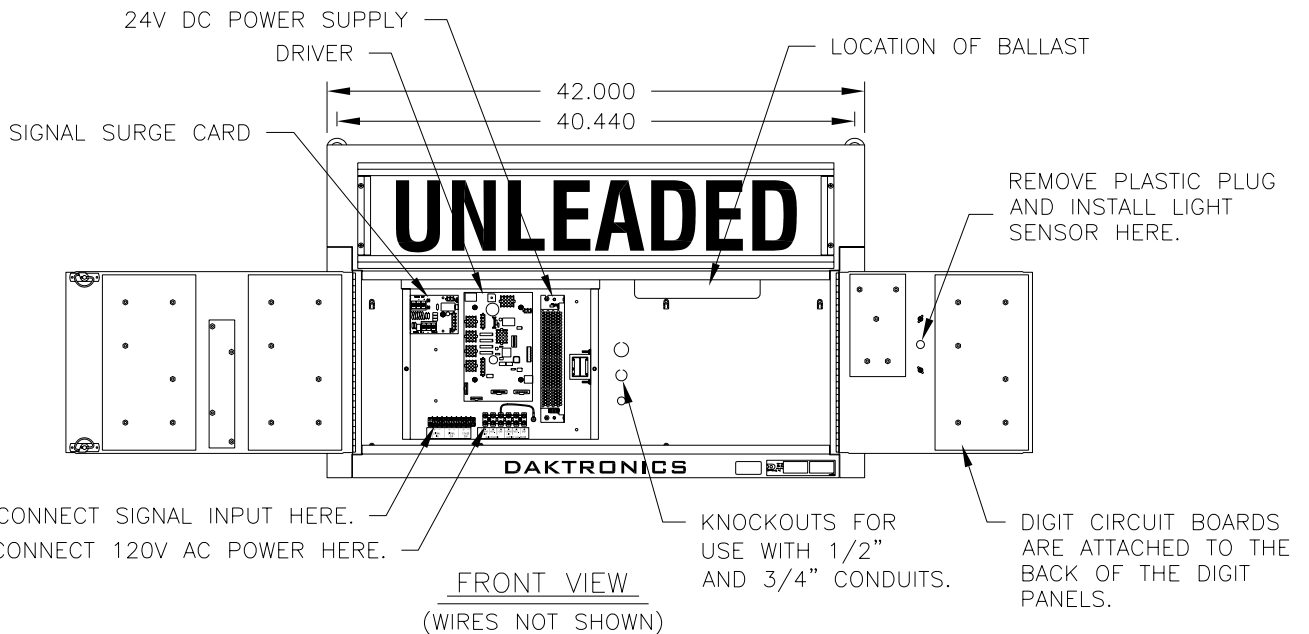
NUMBER INDICATES DRIVER CONNECTION

TURN LATCHES TO OPEN DOORS AND GAIN ACCESS TO INTERNAL COMPONENTS.

LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS.

FRONT VIEW

(WITH CAPTION PANEL REMOVED)



FRONT VIEW

(WIRES NOT SHOWN)

PROVIDE A 120V AC, 15 AMP CIRCUIT

ESTIMATED WEIGHT: 55 LBS [25 KGS]

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PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1024-13

DES. BY: M LEOPOLD

DRAWN BY: M LEOPOLD

DATE: 14 FEB 04

REVISION

APPR. BY:

SCALE: 1=15

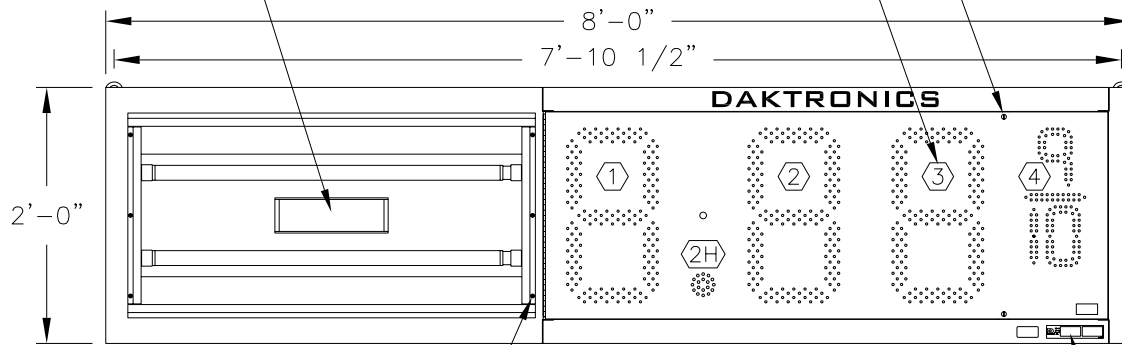
1319-R04A-234222

REV.	DATE	DESCRIPTION	BY	APPR.
01	01 JUN 05	UPDATED DIGIT PANELS PER DESIGN CHANGES.	MGL	

TURN THE LATCHES TO OPEN DOOR AND GAIN ACCESS TO INTERNAL COMPONENTS.

LOCATION OF BALLAST

NUMBER INDICATES DRIVER CONNECTION



REMOVE SCREWS IN THE CAPTION END RAILS TO REMOVE THE RAILS AND CAPTION PANEL.

FRONT VIEW
(WITH CAPTION PANEL REMOVED)

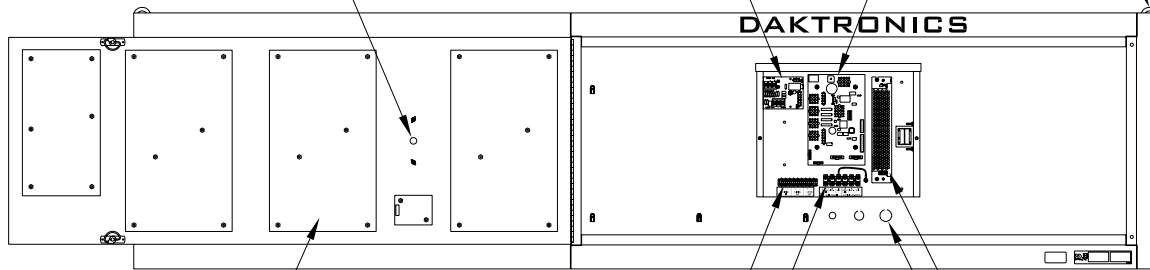
LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS.

LIFT EYES ARE FOR USE DURING INSTALLATION ONLY, AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

REMOVE PLASTIC PLUG AND INSTALL THE LIGHT SENSOR HERE.

SIGNAL SURGE SUPPRESSION CARD

DRIVER

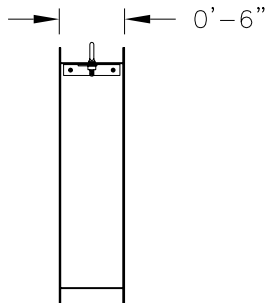


DIGIT CIRCUIT BOARDS ARE ATTACHED TO THE BACK OF THE DOOR.

CONNECT SIGNAL INPUT HERE.
CONNECT 120V AC POWER HERE.

24V DC POWER SUPPLY
KNOCKOUTS FOR USE WITH 1/2" AND 3/4" CONDUITS.

FRONT VIEW
(WIRES NOT SHOWN)
(WITH DOOR OPEN)



SIDE VIEW

PROVIDE A 120V AC, 15 AMP CIRCUIT
ESTIMATED WEIGHT: 100 LBS [45 KG]

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PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1026-18

DES. BY: M LEOPOLD

DRAWN BY: M LEOPOLD

DATE: 17 MAR 05

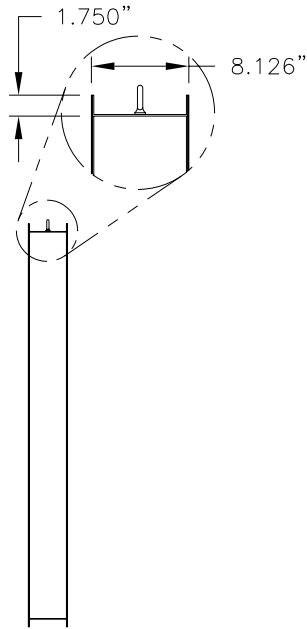
REVISION

APPR. BY:

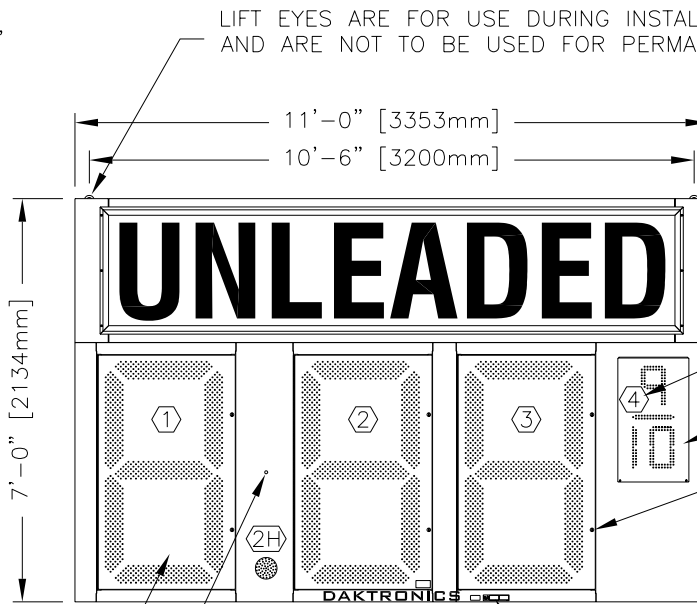
SCALE: 1=18

1319-R04A-235302

REV.	DATE	DESCRIPTION	BY	APPR.
00				



SIDE VIEW



FRONT VIEW

LIFT EYES ARE FOR USE DURING INSTALLATION ONLY, AND ARE NOT TO BE USED FOR PERMANENT SUSPENSION.

NUMBER INDICATES DRIVER CONNECTION

24" 9/10" DIGIT

TURN LATCHES TO OPEN HINGED DIGIT PANELS AND GAIN ACCESS TO INTERNAL COMPONENTS.

LOOK HERE FOR MODEL NUMBER AND POWER REQUIREMENTS.

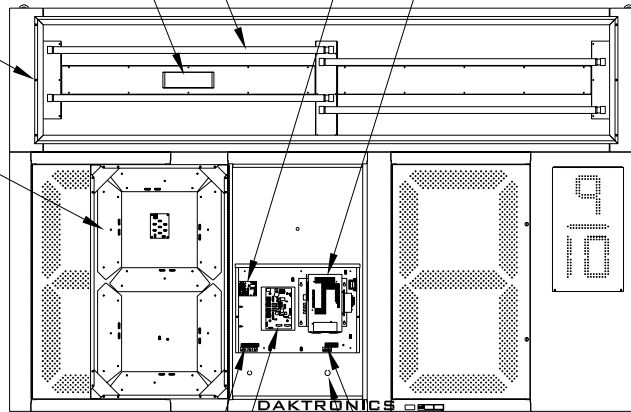
48" HINGED DIGIT PANELS

REMOVE THE PLASTIC PLUG AND INSTALL LIGHT SENSOR FOR AUTOMATIC DIMMING

5-FOOT FLUORESCENT LAMPS
FLUORESCENT BALLAST
SIGNAL SURGE SUPPRESSION CARD
POWER SUPPLY

REMOVE SCREWS IN THE CAPTION END RAILS TO REMOVE THE RAILS AND THE CAPTION PANEL.

DIGIT CIRCUIT BOARDS ARE ATTACHED TO THE BACK OF THE DOORS.



CONNECT SIGNAL INPUT HERE. DRIVER
CONNECT 120V AC POWER HERE. KNOCKOUTS FOR USE WITH 1/2" AND 3/4" CONDUITS.

FRONT VIEW

(WITH ONE DOOR OPEN)
(WIRES NOT SHOWN)

PROVIDE A 120V AC, 15 AMP CIRCUIT
ESTIMATED WEIGHT: 350 LBS [159 KG]

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PROJ: GAS PRICE DISPLAYS

TITLE: SHOP DRAWING, DF-1024-48

DES. BY: M LEOPOLD

DRAWN BY: M LEOPOLD

DATE: 17 MAR 05

REVISION

APPR. BY:

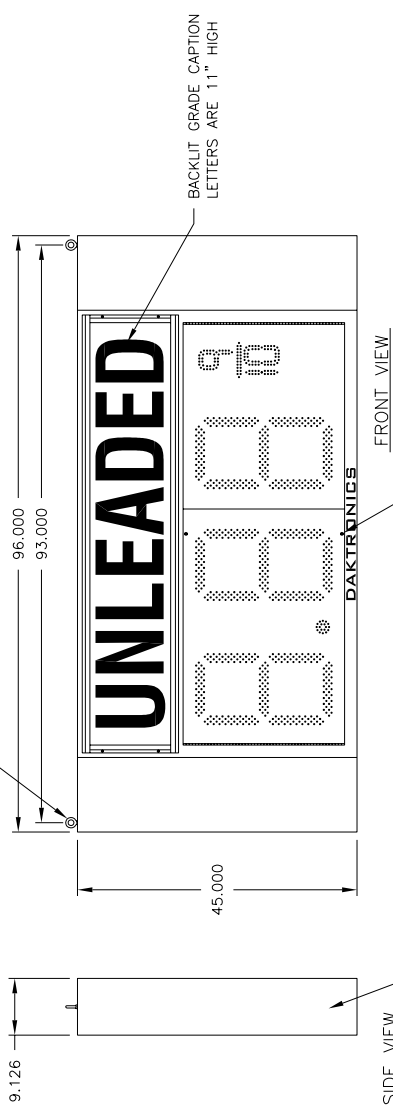
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SCALE: 1=40

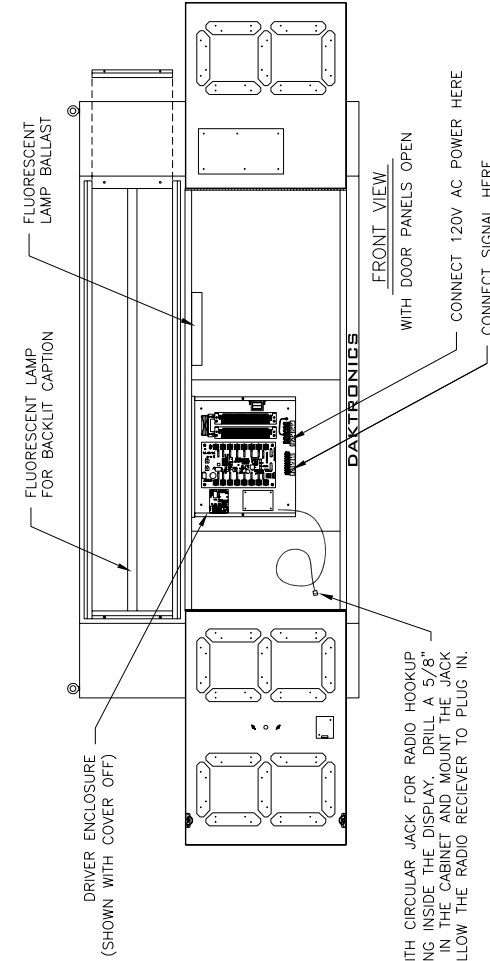
1319-R04A-236905

REV.	DATE	DESCRIPTION	BY	APPR.

EYEBOLTS ARE FOR LIFTING DURING INSTALLATION ONLY AND ARE NOT TO BE USED FOR SUSPENDED MOUNTING.



DRILL THROUGH THE SIDE OF THE CABINET AS REQUIRED TO MOUNT THE DISPLAY.
 POWER AND SIGNAL WIRES CAN BE ROUTED INTO SIDE OF CABINET.
 ACCESS INTERNAL COMPONENTS BY TURNING THE LATCHES AND OPENING THE DOORS.



CABLE WITH CIRCULAR JACK FOR RADIO HOOKUP IS HANGING INSIDE THE DISPLAY. DRILL A 5/8" HOLE IN THE CABINET AND MOUNT THE JACK TO ALLOW THE RADIO RECEIVER TO PLUG IN.

NOTES:
GENERAL

DIGITS ARE 24" NOMINAL HEIGHT. SMALL 9/10 DIGIT IS 13" HIGH. DIGITS LEADS MAY BE RED, AMBER, OR GREEN; TO BE SPECIFIED AT TIME OF ORDER.

MECHANICAL

CABINET FRAME IS EXTRUDED ALUMINUM CHANNEL, 0.10" THICK. FRONT AND BACK ARE ALUMINUM SHEET, 0.063" THICK. ESTIMATED WEIGHT IS ABOUT 250 LBS.

IF THE EYEBOLTS ARE TO BE REMOVED AFTER INSTALLATION, PLUG HOLES BY THREADING IN 1/2"-13 BOLTS, NOT PROVIDED.

DRILL THROUGH THE SIDES OF THE CABINET TO ATTACH THE DISPLAY TO BASE STRUCTURE USING APPROPRIATE HARDWARE FOR THE SITE CONDITIONS.

DAKTRONICS IS NOT RESPONSIBLE FOR THE MOUNTING STRUCTURE OR FOR THE ADEQUACY OF ATTACHMENT TO THE STRUCTURE. STRUCTURE AND ATTACHMENT MUST CONFORM TO ALL APPLICABLE BUILDING CODES.

ELECTRICAL

MAXIMUM POWER CONSUMPTION IS ABOUT 350 WATTS. PROVIDE A 120V AC, 15 AMP CIRCUIT FOR POWER.

CONTROL CONNECTION REQUIRES TWO-PAIR CABLE, 22 AWG.

SERVICE AND ELECTRICAL HOOKUP ACCESS IS THROUGH THE FRONT OF THE DISPLAY ONLY.

REAR VIEW OF DISPLAY IS SIMILAR, EXCEPT FOR DRIVER ACCESS. DRIVER ACCESS IS POSSIBLE ONLY FROM THE FRONT.

IF THE POWER TO THE DISPLAY IS TEMPORARILY DISRUPTED, DISPLAY FUNCTIONS WILL BE RETAINED IN MEMORY TO CONTINUE OPERATION WHEN POWER IS RESTORED.

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PROJ:	CAS PRICE DISPLAYS
TITLE:	SHOP DRAWING, DF-1222-24
DES. BY:	DRAWN BY: M LEOPOLD
DATE:	DATE: 05 NOV 04
REVISION:	1319-R04B-227099
APPR. BY:	SCALE: 1=20
02	02

REV.	DATE	DESCRIPTION	BY	APPR.
02	30 JUN 05	UPDATED DIGIT PANELS PER DESIGN CHANGES.	MGL	
01	08 MAR 05	UPDATED DRIVER TO 16 COLUMNS.	MGL	

Appendix B: DataMaster Frequently Asked Questions (FAQ)

DataMaster FAQ.....ED-13481

Appendix C: DataMaster Gasoline Price Quick Installation Reference

Gasoline Price Displays

Direct-Wire Installation Quick Install ReferenceED-13965

Appendix D: DataMaster Gasoline Price Quick Start Reference

DataTime Gasoline Price Displays Quick Start ReferenceED-13960