



**G-1000 Series InfoNet™**  
**Outdoor LED Displays**  

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**Installation/Maintenance**  
**Manual**

**ED-8157**

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Windows™ is a trademark of Microsoft Corp.

**ED#8157**  
**Product#1137**  
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# Section 1: Introduction

---

## 1.1 How To Use This Manual

---

This manual is designed to explain installation of outdoor InfoNet™ Displays. Details for display maintenance are also given. 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.

### Important Safeguards:

1. Read and understand these instructions before installing.
2. Do not drop the control equipment or allow it to get wet.
3. **Disconnect power when servicing the display.**
4. Do not modify the display structure or attach any panels or coverings to the display without the express written consent of Daktronics, Inc.
5. **Care must be taken when handling the display's face panel to prevent any injuries or damage, especially in windy conditions.**

The box below is an illustration of Daktronics drawing numbering system. The drawing number "7087-P08A-69945" is how Daktronics identifies individual drawings. This number is located in the bottom right corner of the drawing. The manual will refer to drawings by calling out the last five digits and the letter preceding them. In the example, the drawing would be referred to as **Drawing A-69945**. All drawings referred to as such will be inserted at the *end of the section they are first referenced in*.

DAKTRONICS, INC.    BROOKINGS, SD 57006	
PROJ:	
TITLE:	
DES. BY:	DRAWN BY:      DATE:
APPR. BY:	7087-P08A-69945
SCALE:	

## 1.2 Display Overview

---

**Reference Drawings:** Overall Dimensions; G-1000 ..... **Drawing A-88154**

**Note:** This manual has been revised to reflect design changes to the G-1000 product family. Displays manufactured before **NOVEMBER 1, 1996**, please refer to **Appendix B**.

The outdoor InfoNet display uses LEDs for long life and reliable operation. Four (4) LEDs are grouped together to form a single pixel and each line uses six (6) pixels high to create a character. The InfoNet series are *line displays* and are programmed using the Daktronics Venus® 1500 software (refer to the Venus 1500 manual for operation instructions).

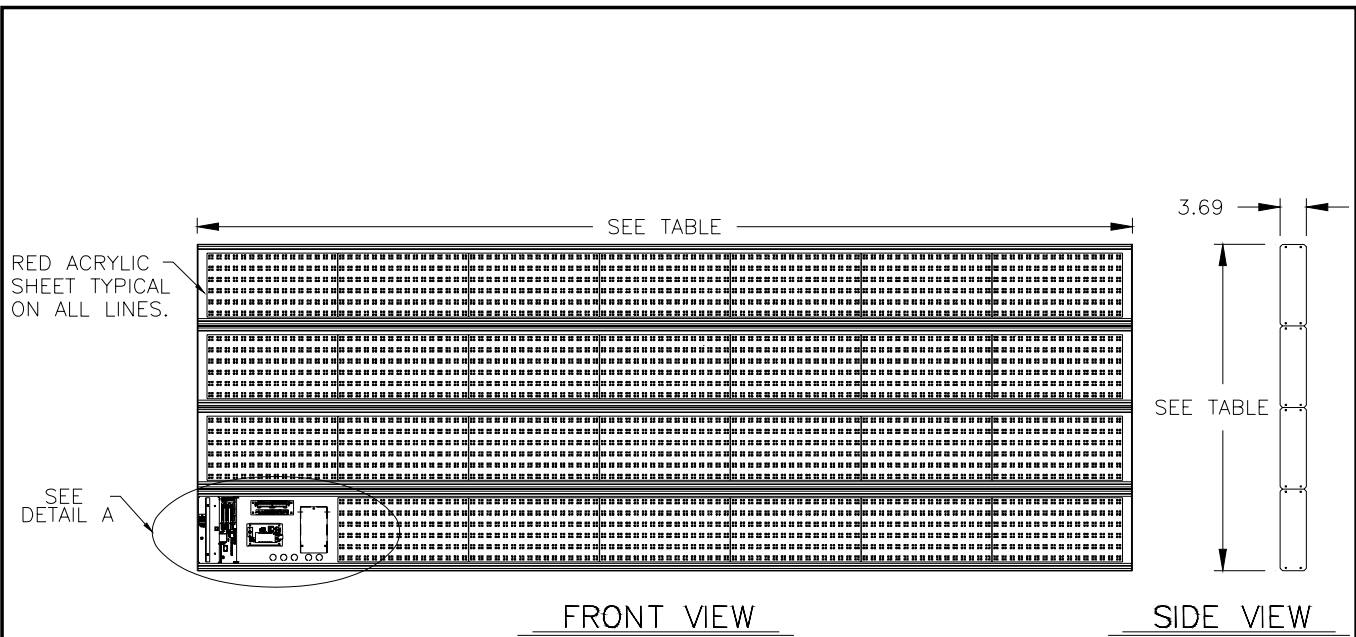
Daktronics has standardized a complete line of outdoor InfoNet displays. These displays are standard, but have several options for mounting kits and signal communications.

### 1.3 Definitions

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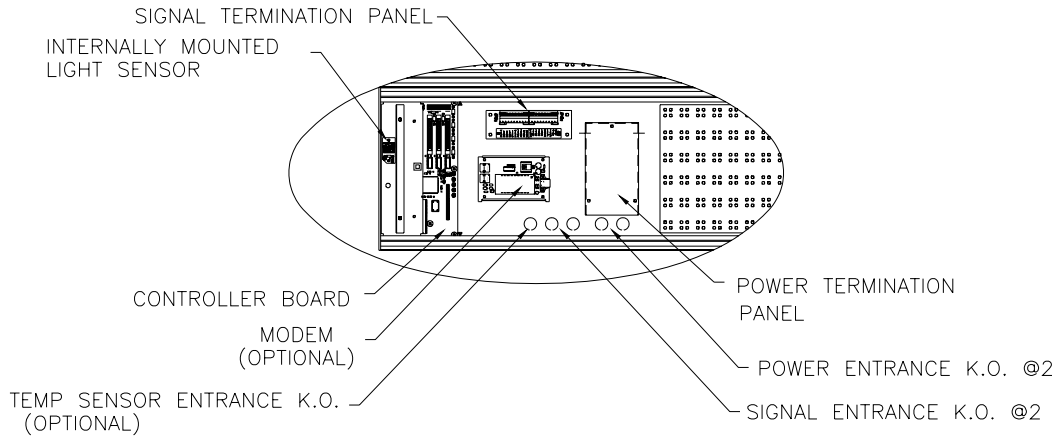
<b>Column:</b>	A vertical group of <i>pixels</i> .
<b>Controller Board:</b>	Controls the data for the entire display. It is located behind the left <i>module</i> in the bottom line.
<b>Driver:</b>	Located on the back of the <i>display board</i> .
<b>Display Board:</b>	A 6 row x 16 column array of <i>pixels</i> .
<b>End Cap:</b>	The side panel that keeps the <i>face panel</i> in place. It must be removed for display access.
<b>Face Panel:</b>	The plexi-glass on each line that goes in front of the <i>modules</i> .
<b>LED:</b>	An <i>LED</i> is an electrical component and is short for Light Emitting Diode. There are 384 LEDs per module.
<b>Line:</b>	A horizontal group of <i>modules</i> .
<b>Module:</b>	Contains the <i>LEDs</i> , <i>display board</i> and the <i>driver</i> .
<b>Network:</b>	A <i>network</i> consists of multiple signs connected to each other. Up to 240 Venus 1500 controlled displays can exist on one network.
<b>Pixel:</b>	A group of four (4) <i>LEDs</i> .
<b>RS/232:</b>	<i>RS/232</i> is a standard PC communication type with a maximum cable length of 25 feet (7.6 meters).
<b>RS/422:</b>	<i>RS/422</i> is a standard differential communication type with a maximum cable length of 4000 feet (1.2 kilometers).
<b>Row:</b>	A horizontal group of <i>pixels</i> .
<b>Sign Address:</b>	The <i>sign address</i> is an identification number assigned to each sign of a <i>network</i> . The control software uses the address to locate and communicate with each display. Displays which are on the same network cannot have the same address.
<b>Venus 1500:</b>	The <i>Venus 1500</i> is a Daktronics designed, Windows® based software used to edit the displays.





FRONT VIEW

SIDE VIEW



DETAIL A

ALL K.O.'S ARE FOR 1/2" CONDUIT.

DISPLAY SIZE COLUMNS \ LINES	48	64	80	96	112	128
	1 LINE	11.47 X 57.92	11.47 X 76.31	11.47 X 94.70	11.47 X 113.09	11.47 X 131.48
2 LINE	22.94 X 57.92	22.94 X 76.31	22.94 X 94.70	22.94 X 113.09	22.94 X 131.48	22.94 X 149.87
3 LINE	34.41 X 57.92	34.41 X 76.31	34.41 X 94.70	34.41 X 113.09	34.41 X 131.48	34.41 X 149.87
4 LINE	45.88 X 57.92	45.88 X 76.31	45.88 X 94.70	45.88 X 113.09	45.88 X 131.48	45.88 X 149.87

NOTES:

ALL DIMENSIONS ARE IN INCHES

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: 9" OUTDOOR INFONET			
TITLE: OVERALL DIMENSIONS G-1000			
DES. BY:	DRAWN BY: SMYER	DATE: 13NOV96	
REVISION	APPR. BY:	1137-E10A-88154	
	SCALE: 1=25		

01	10DEC96	CHANGED TO AN A-SIZE DRAWING.	JWO	
REV.	DATE	DESCRIPTION	BY	APPR.



# InfoNet™ Monochrome 1000 Series Outdoor LED Line Displays

## Model Specifications (9" Characters with four LEDs Per Pixel)

MODEL #	APPROX. SF CABINET SIZES (H x W x D)	CHAR. HEIGHTS (Nominal)	LINES/ CHAR.'S PER LINE	MAX. POWER WATTS	AVG. POWER WATTS	APPROX. SF WEIGHT (LBS.)	
						UNCRATED	CRATED
G-1000-1-6x48-9	11.50" x 4'10.25" x 3.69"	9"	1/9	94	31	29	34
G-1000-1-6x64-9	11.50" x 6'4.50" x 3.69"	9"	1/12	125	41	39	44
G-1000-1-6x80-9	11.50" x 7'11" x 3.69"	9"	1/16	156	52	48	53
G-1000-1-6x96-9	11.50" x 9'5.25" x 3.69"	9"	1/19	188	62	58	63
G-1000-1-6x112-9	11.50" x 10'11.75" x 3.69"	9"	1/22	219	72	67	77
G-1000-1-6x128-9	11.50" x 12'6" x 3.69"	9"	1/25	250	83	77	87
G-1000-2-6x48-9	1'11" x 4'10.25" x 3.69"	9"	2/9	188	62	58	68
G-1000-2-6x64-9	1'11" x 6'4.50" x 3.69"	9"	2/12	250	83	78	88
G-1000-2-6x80-9	1'11" x 7'11" x 3.69"	9"	2/16	313	103	96	106
G-1000-2-6x96-9	1'11" x 9'5.25" x 3.69"	9"	2/19	375	124	116	126
G-1000-2-6x112-9	1'11" x 10'11.75" x 3.69"	9"	2/22	438	145	134	149
G-1000-2-6x128-9	1'11" x 12'6" x 3.69"	9"	2/25	500	165	154	169
G-1000-3-6x48-9	2'10.50" x 4'10.25" x 3.69"	9"	3/9	281	93	87	97
G-1000-3-6x64-9	2'10.50" x 6'4.50" x 3.69"	9"	3/12	375	124	117	127
G-1000-3-6x80-9	2'10.50" x 7'11" x 3.69"	9"	3/16	469	155	144	159
G-1000-3-6x96-9	2'10.50" x 9'5.25" x 3.69"	9"	3/19	563	186	174	189
G-1000-3-6x112-9	2'10.50" x 10'11.75" x 3.69"	9"	3/22	656	217	201	216
G-1000-3-6x128-9	2'10.50" x 12'6" x 3.69"	9"	3/25	750	250	231	244
G-1000-4-6x48-9	3'10" x 4'10.25" x 3.69"	9"	4/9	375	124	116	131
G-1000-4-6x64-9	3'10" x 6'4.50" x 3.69"	9"	4/12	500	165	156	176
G-1000-4-6x80-9	3'10" x 7'11" x 3.69"	9"	4/16	625	206	192	212
G-1000-4-6x96-9	3'10" x 9'5.25" x 3.69"	9"	4/19	750	248	232	252
G-1000-4-6x112-9	3'10" x 10'11.75" x 3.69"	9"	4/22	875	289	268	288
G-1000-4-6x128-9	3'10" x 12'6" x 3.69"	9"	4/25	1000	330	308	328

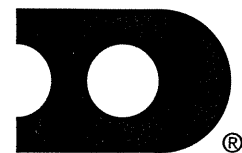
### General Specifications

<b>Power:</b>	120 VAC
<b>Interface:</b>	EIA/TIA RS-422 (Rev. B), and Modem
<b>Operating Temperature:</b>	-40 degrees Fahrenheit to 120 degrees Fahrenheit (-40° C to 50° C)
<b>Paint Color:</b>	Flat black
<b>LED Color:</b>	Red
<b>Face Panel Color:</b>	Red
<b>Mounting Options:</b>	Wall and pole
<b>Auto Dimming:</b>	Displays are equipped with an internal light level detector for auto dimming.
<b>Approvals:</b>	ETL Listed, CSA certified
<b>LED Viewing Angle:</b>	30 degrees, as specified by the LED manufacturer.
<b>LED Rating:</b>	LEDs have an estimated lifetime of 100,000 hours. Unlike incandescent lamps, LEDs do not fail but gradually dim during years of use. The estimated lifetime is the point at which LED brightness is half of the original brightness.

### NOTES:

- Daktronics Venus® 1500 software provided with system. Software requires Windows®-based computer.
- All display signs have on-board controllers and can be controlled locally using a direct cable. An optional modem connection is available.
- Standard cabinet color is Martin-Senour flat black. More than 250 other Martin-Senour colors are available for an additional cost.
- Cabinet dimensions and weights are approximate.
- Average power consumption is figured at 40% usage, with 120 VAC single phase power.
- Power listings are for SF displays. For 2V displays, multiply by two.
- 2V displays do not include center cabinet.
- Consistent with Daktronics policy of continuing product improvement, specifications shown herein are subject to change.
- Daktronics employs an extensive engineering staff, and regularly provides custom designed products. Please call for quotes on all types of display products for custom applications. Daktronics technologies include LED, Incandescent and patented Glow Cube® reflective displays.

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# Section 2: Mechanical Installation

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The Daktronics Product Manager's engineering staff must approve any changes that may affect the weather tightness of the display. This to include, but not limited to, the border shrouding and back sheets. If ANY modifications are made to the weather tightness of the display, detailed drawings of the changes **MUST** be submitted to our engineering staff for evaluation and approval or the warranty will be null and void.

Daktronics is not responsible for the integrity of the mounting structure or any mounting hardware not provided by Daktronics. It is the customers responsibility to ensure that the structure and any additional hardware have been approved by a qualified structural engineer.

## 2.1 Mounting Kit

---

An optional mounting kit is available when ordering a display. The mounting kit includes the hardware to either mount the display on a pole or to a wall. Please specify the desired mounting method when ordering a mounting kit. When using a Daktronics mounting kit, refer to the instructions in **Section 2.2**.

## 2.2 Cabinet Display Mounting

---

**L Note:** There are end caps located at either end of the display for maintenance access. Care must be taken when mounting the display not to obstruct the end caps. The following two example mounting methods, wall mount and pole mount, take this into consideration.

### 2.2.1 Wall Mount

---

**Reference Drawings:** Wall Mount . . . . . **Drawing A-79703**

**L Note:** Because each site differs, the Daktronics wall mount kit is **not** a complete installation kit. It is the customer's responsibility to determine the proper wall mounting method and location.

Refer to **Drawing A-79703** for a suggested mounting method. The number of wall brackets needed and the wall structure **must** be reviewed by a qualified structural engineer and meet all local codes.

One (1) Daktronics provided mounting kit includes:

- C angle bracket (qty. 1)
- C d" lock washers (qty. 2)
- C d" nuts (qty. 2)

**Note:** A multi-line display requires two mounting kits.

1. Attach the angle bracket to the **d**" bolts on the back of the display using **d**" washers and nuts.
2. Mount the customer specified mounting brackets to the wall.
3. Position the display and its mounting angle brackets over the wall mount brackets as shown in **Drawing A-79703**.
4. Attach the two support brackets together using customer supplied hardware.
5. **Be sure that all mounting hardware is tight before releasing the display.**

### 2.2.2 Pole Mount

---

**Reference Drawings:** Pole Mount . . . . . **Drawing A-79702**

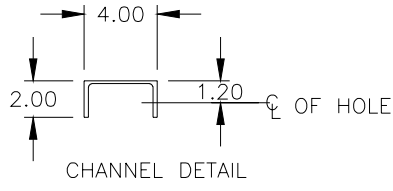
Refer to **Drawing A-79702** for a suggested mounting method. The location of the poles needs to be determined by the customer. The number of poles needed and the pole structure and footings **must** be reviewed by a qualified structural engineer and meet all local codes.

One (1) Daktronics provided mounting kit includes:

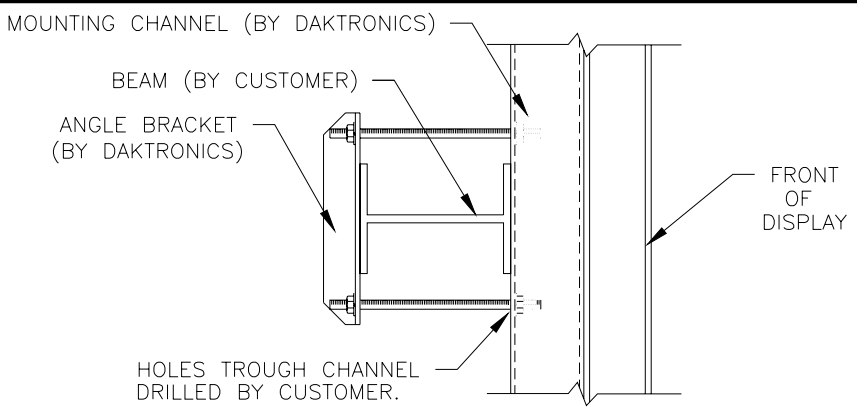
- C channel (qty. 1)
- C angle (qty. 1)
- C **d**" nuts (qty. 2)
- C **d**" lock washers (qty. 2)
- C ½" threaded rods (qty. 4)
- C ½" nuts (qty. 8)
- C ½" washer (qty. 8)

**L Note:** A multi-line display requires two mounting kits.

1. Mount the channel to the **d**" bolts on the back of the display using **d**" washers and nuts.
2. Drill a 9/16" hole in the opposite flange of the mounting channel for each of the ½" threaded rods. **O Note: One threaded rod will go to each side of the mounting pole. The threaded rods should NOT pierce any of the pole's flanges** (refer to **Drawing A-79702**).
3. Position the display on the pole.
4. Use ½" nuts and washers to attach the threaded rods to the channel.
5. Position the angle(s) on the opposite side of the pole from the display and slide the angle(s) onto the threaded rods. Secure the angle(s) with ½" nuts and washers.
6. **Be sure that all mounting hardware is tight before releasing the display.**



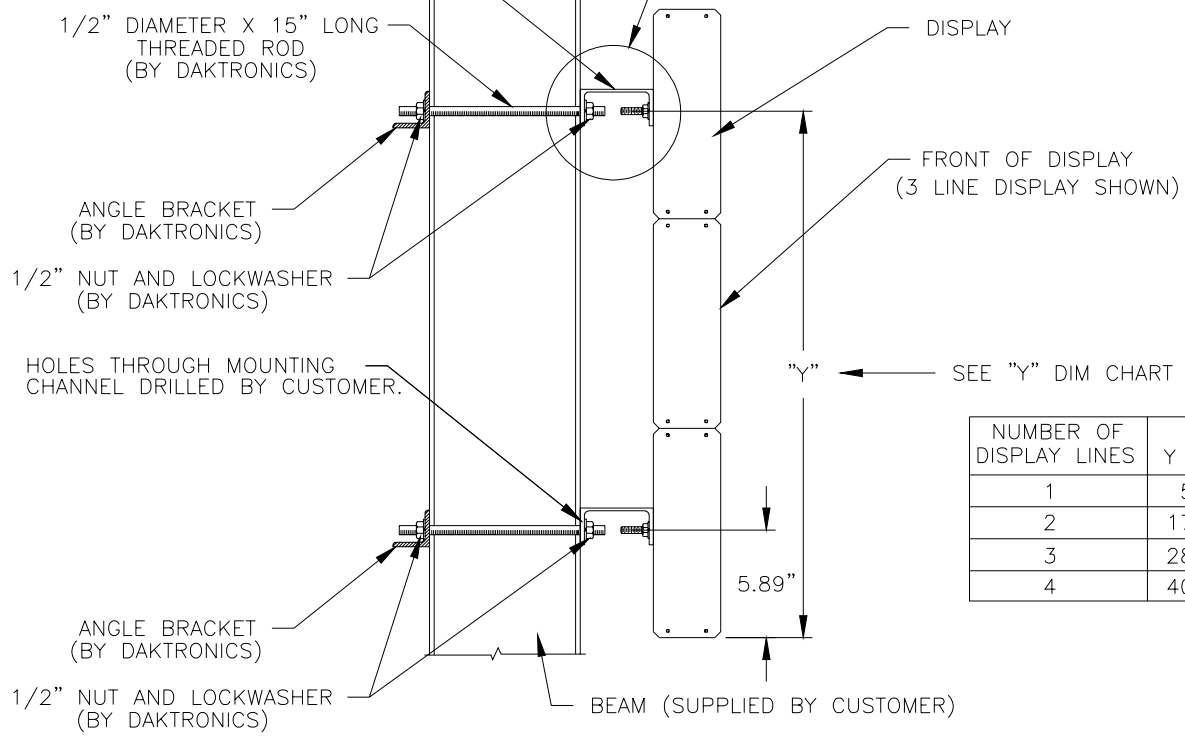
DISPLAY LENGTH	MOUNTING CHANNEL LENGTH "L"
48	51.00"
64	70.00"
80	88.00"
96	107.00"
112	125.00"
128	143.00"



**TOP VIEW**

- THREADED RODS RUN ALONG BOTH SIDES OF BEAM.
- THEY DO NOT PASS THROUGH THE FLANGES OF THE BEAM.
- DRILLING IS NECESSARY ON FLANGE OF MOUNTING CHANNEL.

4" X 2" X 1/4" MOUNTING CHANNEL (REFER TO CHART ABOVE FOR LENGTHS)



NUMBER OF DISPLAY LINES	Y DIM
1	5.89"
2	17.36"
3	28.83"
4	40.29"

**SIDE VIEW**

ALL HARDWARE FOR MOUNTING IS PROVIDED BY DAKTRONICS. BEAMS ARE SUPPLIED BY CUSTOMER. HOLES FOR THE 1/2" THREADED ROD WILL HAVE TO BE DRILLED IN THE MOUNTING CHANNEL BY THE CUSTOMER.

3	21JAN97	ADDED CHANNEL DETAIL	SPR		<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>	
2	6 DEC 96	ADDED TABLES FOR "Y" DIM AND DIMENSIONS FOR MOUNTING CHANNEL	JEM		PROJ: <b>9" OUTDOOR INFONET</b>	
01	15NOV96	ADDED CHANNEL DIMENSIONS & UPDATED SIDE VIEW OF DISPLAY.	JWO		TITLE: <b>POLE MOUNTING</b>	
REV.	DATE	DESCRIPTION	BY	APPR.	DES. BY:	DRAWN BY: <b>NJA</b> DATE: <b>28 FEB 96</b>
					REVISION	APPR. BY:
						SCALE: <b>1=10</b>
						<b>1137-R10A-79702</b>

HARDWARE TO HOLD MOUNTING ANGLES TOGETHER  
(PROVIDED BY CUSTOMER)

WALL MOUNT ANGLE BRACKET  
(PROVIDED BY CUSTOMER)

WALL MOUNT ANCHOR  
(PROVIDED BY CUSTOMER)

3" X 3" X 1/4"  
MOUNTING ANGLE BRACKET  
(PROVIDED BY DAKTRONICS)  
\* SEE CHART BELOW

DISPLAY LENGTH	MOUNTING ANGLE BRACKET LENGTH
	"L"
48	51.00"
64	70.00"
80	88.00"
96	107.00"
112	125.00"
128	143.00"

WALL

DISPLAY

3/8" HARDWARE  
(PROVIDED BY DAKTRONICS)

3.61  
1.93

DISPLAY

\* SEE "Y" DIM  
CHART BELOW

NUMBER OF DISPLAY LINES	"Y" DIM
1	7.32"
2	18.79"
3	30.26"
4	41.72"

"Y"

7.32

FRONT OF DISPLAY  
(THREE LINE DISPLAY SHOWN)

WALL

SIDE VIEW

MOUNTING ANGLE BRACKETS FOR REAR OF DISPLAY AND 3/8" HARWARE FOR HOLDING ANGLE TO REAR OF DISPLAY PROVIDED BY DAKTRONICS. ALL OTHER HARDWARE PROVIDED BY CUSTOMER. HOLES FOR HARDWARE HOLDING MOUNTING ANGLES TOGETHER ARE TO BE DRILLED BY CUSTOMER.

DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
2	10 DEC 96	ADDED TABLES FOR Y DIM AND DIMENSIONS FOR MOUNTING ANGLE BRACKET.	JEM	
01	15NOV96	ADDED WALL MOUNTING ANGLE DIMENSIONS AND UPDATED SIDE VIEW OF DISPLAY	JWO	

PROJ: 9" OUTDOOR INFORNET	
TITLE: WALL MOUNTING	
DES. BY:	DRAWN BY: NJA
DATE: 28 FEB 96	
REVISION	APPR. BY:
SCALE: 1=12	1137-R10A-79703



# Section 3: Electrical Installation

---

## 3.1 Conduit

---

<b>Reference Drawings:</b>	System Riser Diagram (422) . . . . .	<b>Drawing A-88425</b>
	System Riser Diagram (Modem) . . . . .	<b>Drawing A-88426</b>
	Power/Signal Termination Panel . . . . .	<b>Drawing A-88427</b>
	Overall Dimensions; G-1000 . . . . .	<b>Drawing A-88154</b>

**Daktronics does not include the conduit. Knockouts will be provided.** Separate conduit must be used to route:

- C power
- C signal IN wires
- C signal OUT wires (if signal is required for another display).

The conduit holes are located at the bottom right (rear view) of the back of the display.

To access the knockouts, remove the right end cap (front view) on the bottom line and slide the face panel out until the left module is cleared. Refer to **Drawing A-88154 (Section 1)** and **Section 4.3** to remove the module.

Punch or drill out the desired knockouts. **Note:** Be careful that none of the components are damaged. Attach the conduit and route the power and signal cables. Refer to **Drawing A-88427** for the signal and power termination panel.

For displays with more than one face, signal and temperature sensor wiring between the displays can be routed through the same conduit.

## 3.2 Grounding

---

The display **must** be connected to earth-ground. Proper grounding is necessary for reliable equipment operation. It also serves to provide protection to the equipment against damaging electrical disturbances and lightning. **If the following grounding methods are not adhered to, the warranty will be void.**

*~ Displays **MUST** be grounded according to the provisions outlined in Article 250 of the National Electrical Code. ~*

The support structure for the display cannot be used as grounding. The support is generally embedded in concrete, and if in earth, the support is either primed or it corrodes, making it a poor ground. Use one ground rod at each support column.

The National Electrical Code requires the use of a lockable power disconnect near the display. Provide a lockable disconnect switch (knife switch) at the display location so that all power lines can be completely disconnected. Use a multi-conductor disconnect so that all the hot and the neutral lines can be disconnected. This is important in protecting the display against lightning.

There are two considerations for power installation, New Power and Existing Power Installation. These two power installations differ slightly, as described in the following paragraphs.

### 3.2.1 New Power Installation

The power cable **must** contain a separate earth-ground conductor. When a separate ground conductor is used, **do not** connect neutral to ground at either the disconnect or the display. To do so violates electrical codes and voids the warranty (refer to **Figure 1**).

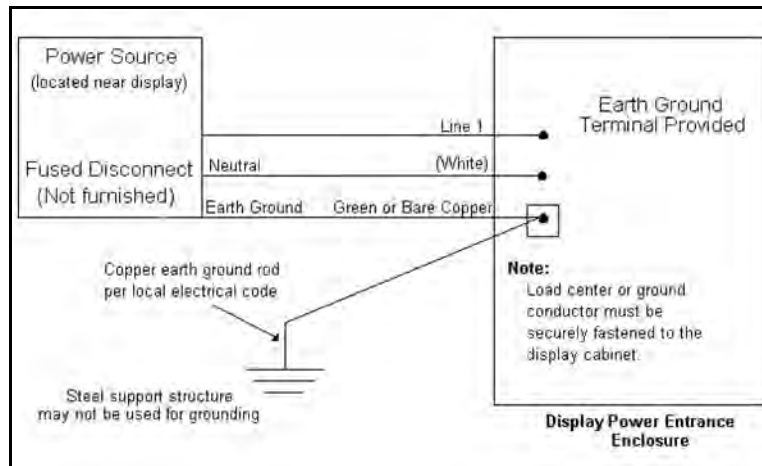


Figure 1: New Power Installation

### 3.2.2 Existing Power Installation With No Earth Ground Conductor

When a separate ground conductor is **not** available, connect the neutral to the earth-ground at the disconnect, **never** at the display (refer to **Figure 2**).

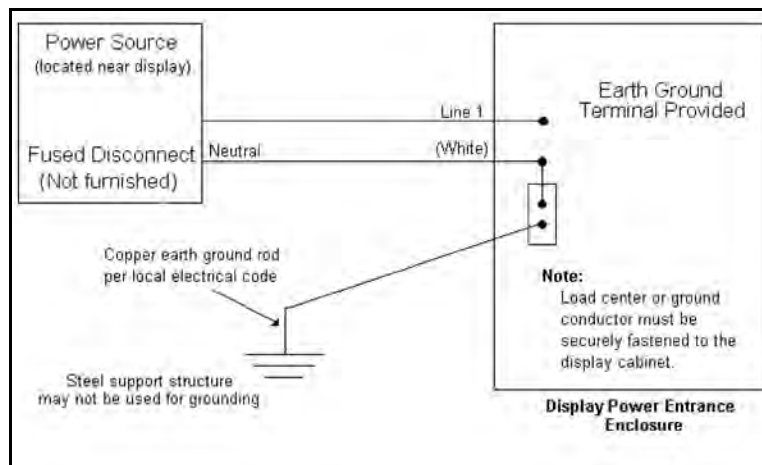


Figure 2: Existing Power Installation

### 3.3 Control Cable Requirements

---

#### 3.3.1 RS/232

---

This cable is a 2-conductor shielded cable used to transmit a RS/232 signal (Daktronics part number W-1117). This shielded cable should not be subjected to mechanical flexing after installation. This cable is not for direct burial and should be routed in a dedicated, grounded metallic conduit at the base of the display structure. This cable has a maximum length of 25 feet.

#### 3.3.2 RS/422

---

This cable is a 6-conductor unshielded cable used to transmit a RS/422 signal (Daktronics part number W-1210). This unshielded cable consists of paired wires. They should not be subjected to mechanical flexing after installation. This cable is not for direct burial and should have one of the following routings:

1. In dedicated metallic conduit
2. In plastic conduit away from interference signals
3. Inside buildings - if cable is not in conduit, keep away from interference signals.
  - └ With interference signals, such as power conductors, intercom, etc., a two-foot separation is typically required.

#### 3.3.3 Modem

---

The modem option will use standard telephone cable routed through conduit. The local telephone company will need to assist in this installation.

Ask the telephone company which colors are used by the TIP, and the RING for signal hook up. **U Note:** The telephone lines must be dedicated lines and *not* run through a switch board/communications system.

### 3.4 Signal Termination From Computer To Display

---

#### 3.4.1 RS/232

---

**Reference Drawings:** Signal/Power Termination Panel . . . . . **Drawing A-88427**  
System Riser Diagram (232) . . . . . **Drawing A-96058**

One end of the signal cable should be terminated to the 10 position terminal block in the display labeled "DATA IN" (TB42). **Drawing A-88427** is an example of the termination panels. The other end is terminated at the J-box at the display structure. The laptop PC connects to the J-box through the serial cable (refer to **Drawing A-96058**).

J-Box	Field Cabling	Terminal Block (Data In)
		Pin 1 (N.C.)
		Pin 2 (N.C.)
Pin 2 (RX-P)	Clear	Pin 3 (TX-P)
Pin 3 (GND)	Shield	Pin 4 (GND)
Pin 1 (TX-P)	Black	Pin 5 (RX-P)
		Pin 6 (N.C.)

### 3.4.2 RS/422

---

**Reference Drawings:** Signal/Power Termination Panel . . . . . **Drawing A-88427**  
System Riser Diagram (422) . . . . . **Drawing A-92681**

One end of the signal cable should be terminated to the 10 position terminal block in the display labeled "DATA IN" (TB42). **Drawing A-88427** is an example of the termination panels. The other end is terminated at the signal converter (Daktronics part number 0A-1127-0237) in the control room.

Signal Converter (J4/J5)	Field Cabling	Terminal Block (Data In)
Pin 1 (GND)	Red	Pin 1 (GND)
Pin 2 (RX-P)	Black	Pin 2 (TX-P)
Pin 3 (RX-N)	Brown	Pin 3 (TX-N)
Pin 4 (TX-P)	White	Pin 4 (RX-P)
Pin 5 (TX-N)	Blue	Pin 5 (RX-N)
Pin 6 (GND)	Green	Pin 6 (GND)
	Shield (Bare)	N.C.

### 3.4.3 Modem

---

**Reference Drawings:** System Riser Diagram (Modem) . . . . . **Drawing A-88426**  
Signal/Power Termination Panel . . . . . **Drawing A-88427**

Terminate the signal telephone wires in TB42 as follows:

Telephone Wires	Terminal Block
N.C.	Pin 1
N.C.	Pin 2
TIP-P	Pin 3
Ring-P	Pin 4
N.C.	Pin 5
N.C.	Pin 6

### 3.5 Signal Termination Between Two (or more) Displays

---

**Reference Drawings:** System Riser Diagram (422) ..... **Drawing A-88425**  
System Riser Diagram (Modem) ..... **Drawing A-88426**  
Signal/Power Termination Panel ..... **Drawing A-88427**

This is the most common method of terminating signal between two or more signs. A 6-conductor cable is used and one end terminates at the “DATA OUT” 10 position terminal block (TB43) on the first display. The other end terminates at the “DATA IN” 10 position terminal block (TB42) in the second display.

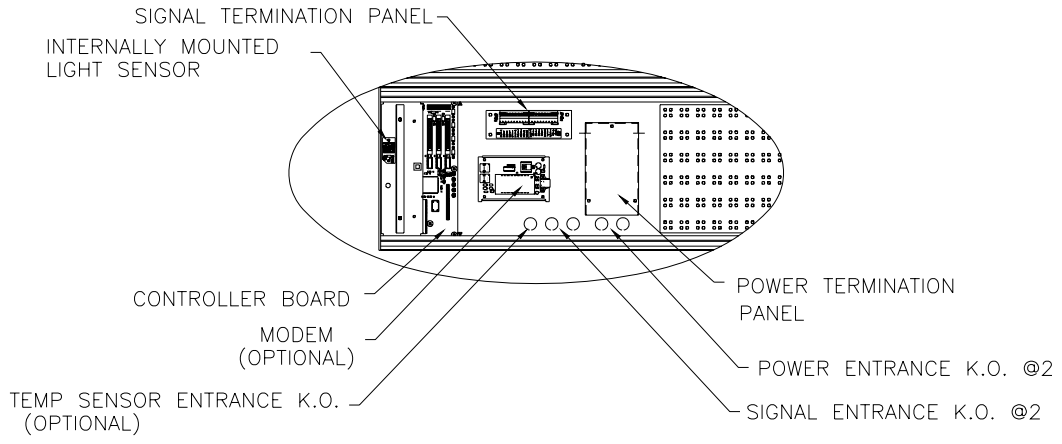
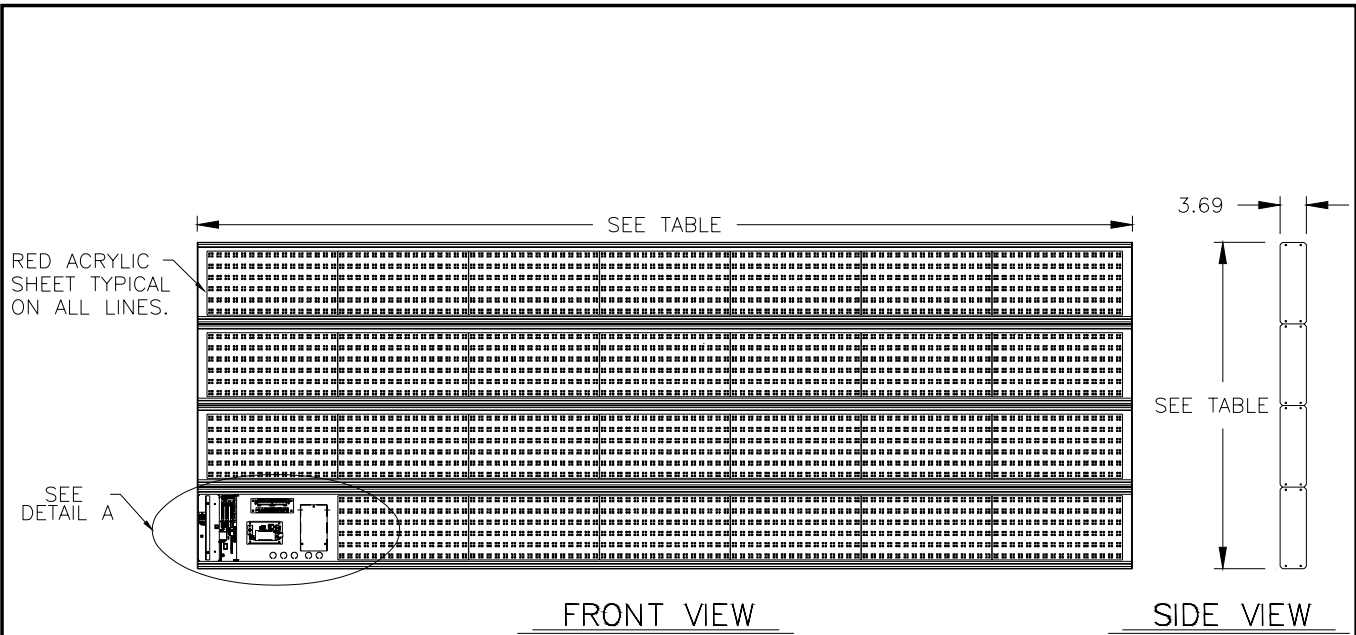
<b>Sign A Data Out (TB43)</b>	<b>Field Cabling</b>	<b>Sign B Data In (TB42)</b>
Pin 1 (GND)	Green	Pin 6 (GND)
Pin 2 (Data TX-N)	Blue	Pin 5 (Data RX-N)
Pin 3 (Data TX-P)	White	Pin 4 (Data RX-P)
Pin 4 (Data RX-N)	Brown	Pin 3 (Data TX-N)
Pin 5 (Data RX-P)	Black	Pin 2 (Data TX-P)
Pin 6 (GND)	Red	Pin 1 (GND)
	Shield (Bare)	N.C.

### 3.6 First Time Turn On

---

When first powered up, the display will run through an initialization in which it will display the following:

1. Output Test (DDD's)
2. Display Model Number (i.e. G-1000-3-6x96)
3. Firmware Version
4. COM1 Configuration (Typically V1500)
5. COM2 Configuration (Either DataView™ or RTD)
6. Power Line Frequency (i.e. 60 Hz)
7. Display Address
8. Sign Name
9. Modem (if present)



ALL K.O.'S ARE FOR 1/2" CONDUIT.

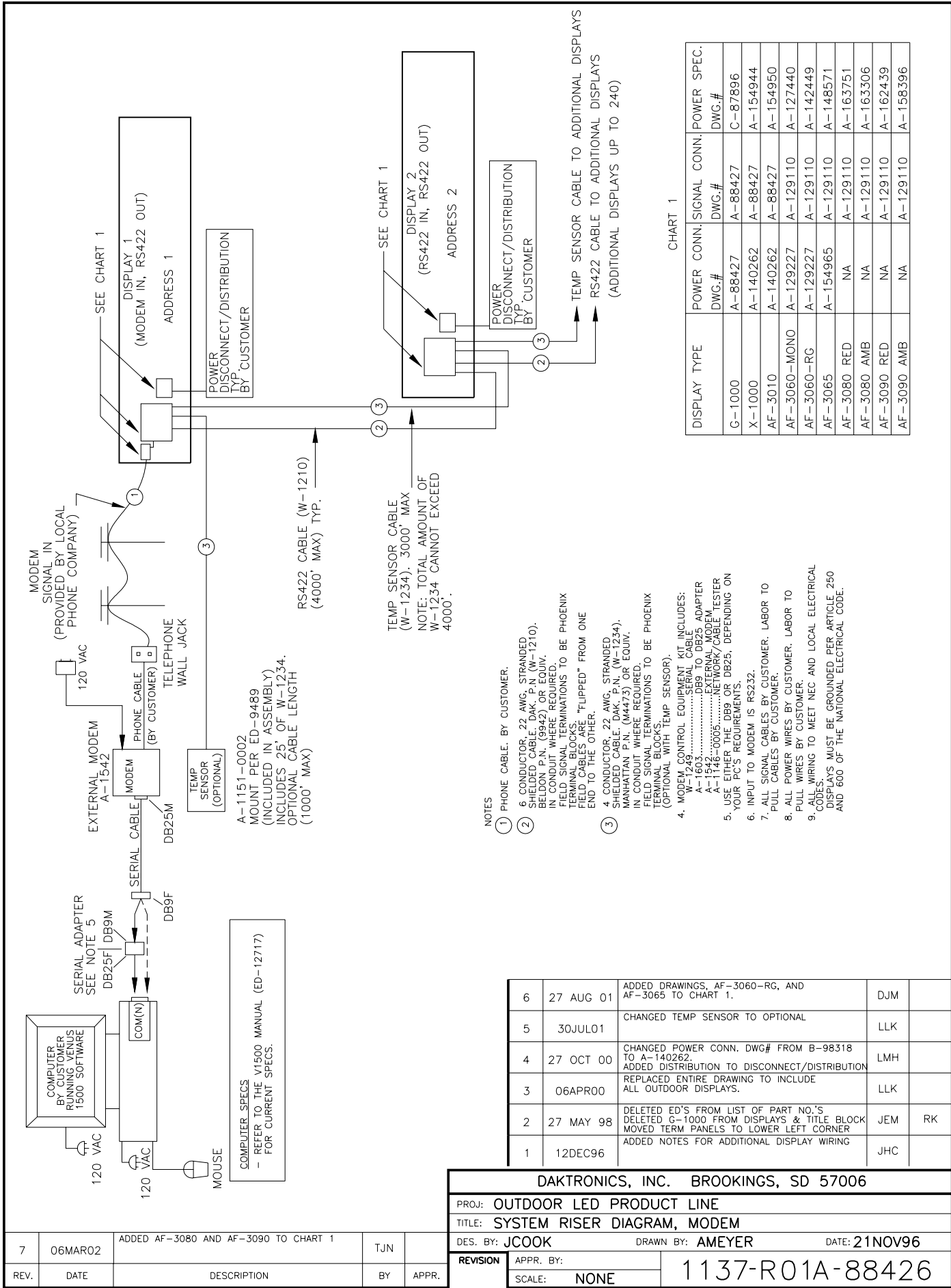
DISPLAY SIZE	COLUMNS					
	48	64	80	96	112	128
1 LINE	11.47 X 57.92	11.47 X 76.31	11.47 X 94.70	11.47 X 113.09	11.47 X 131.48	11.47 X 149.87
2 LINE	22.94 X 57.92	22.94 X 76.31	22.94 X 94.70	22.94 X 113.09	22.94 X 131.48	22.94 X 149.87
3 LINE	34.41 X 57.92	34.41 X 76.31	34.41 X 94.70	34.41 X 113.09	34.41 X 131.48	34.41 X 149.87
4 LINE	45.88 X 57.92	45.88 X 76.31	45.88 X 94.70	45.88 X 113.09	45.88 X 131.48	45.88 X 149.87

**NOTES:**  
ALL DIMENSIONS ARE IN INCHES

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: 9" OUTDOOR INFONET			
TITLE: OVERALL DIMENSIONS G-1000			
DES. BY:	DRAWN BY: SMYER	DATE: 13NOV96	
REVISION	APPR. BY:	1137-E10A-88154	
	SCALE: 1=25		

01	10DEC96	CHANGED TO AN A-SIZE DRAWING.	JWO	
REV.	DATE	DESCRIPTION	BY	APPR.





REV.	DATE	DESCRIPTION	BY	APPR.
7	06MAR02	ADDED AF-3080 AND AF-3090 TO CHART 1	TJN	

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

PROJ: **OUTDOOR LED PRODUCT LINE**

TITLE: **SYSTEM RISER DIAGRAM, MODEM**

DES. BY: **JCOOK** DRAWN BY: **AMEYER** DATE: **21NOV96**

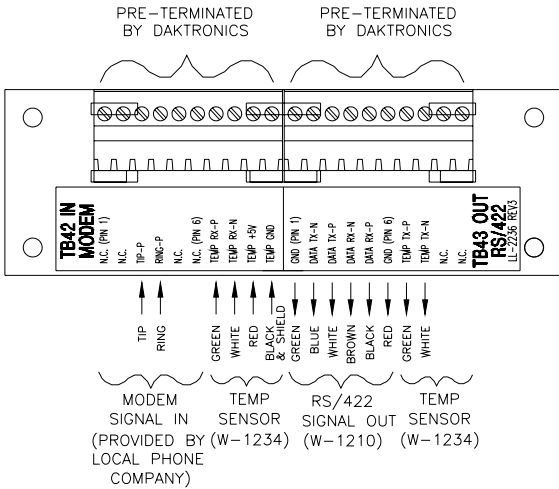
REVISION APPR. BY: **1137-R01A-88426**

SCALE: **NONE**

6	27 AUG 01	ADDED DRAWINGS, AF-3060-RG, AND AF-3065 TO CHART 1.	DJM	
5	30JUL01	CHANGED TEMP SENSOR TO OPTIONAL	LLK	
4	27 OCT 00	CHANGED POWER CONN. DWG# FROM B-98318 TO A-140262. ADDED DISTRIBUTION TO DISCONNECT/DISTRIBUTION	LMH	
3	06APR00	REPLACED ENTIRE DRAWING TO INCLUDE ALL OUTDOOR DISPLAYS.	LLK	
2	27 MAY 98	DELETED ED'S FROM LIST OF PART NO.'S DELETED G-1000 FROM DISPLAYS & TITLE BLOCK MOVED TERM PANELS TO LOWER LEFT CORNER	JEM	RK
1	12DEC96	ADDED NOTES FOR ADDITIONAL DISPLAY WIRING	JHC	

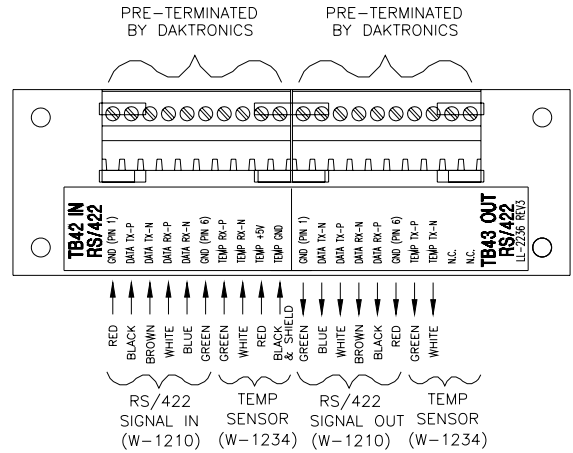


### MODEM SIGNAL CONNECTIONS



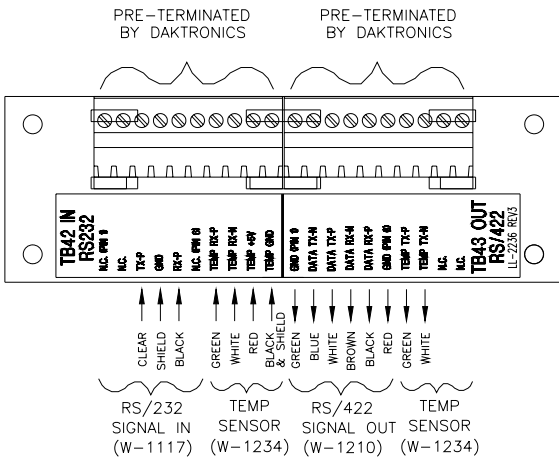
**DETAIL F**  
SIGNAL CONNECTIONS

### RS/422 SIGNAL CONNECTIONS



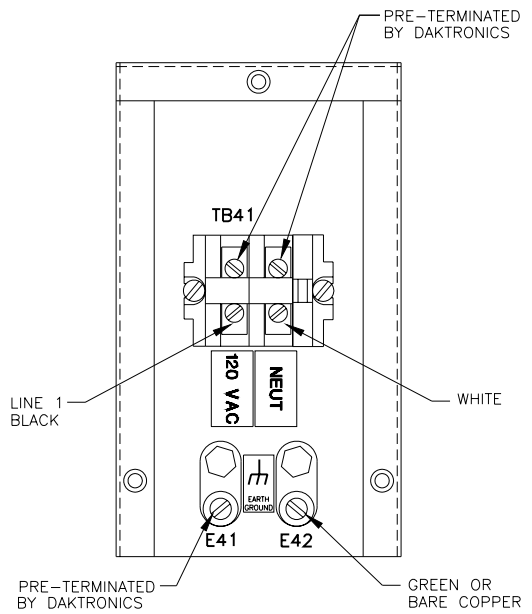
**DETAIL D**  
SIGNAL CONNECTIONS

### RS/232 SIGNAL CONNECTIONS



**DETAIL G**  
SIGNAL CONNECTIONS

"ONLY USED IN G-1000 DISPLAYS"



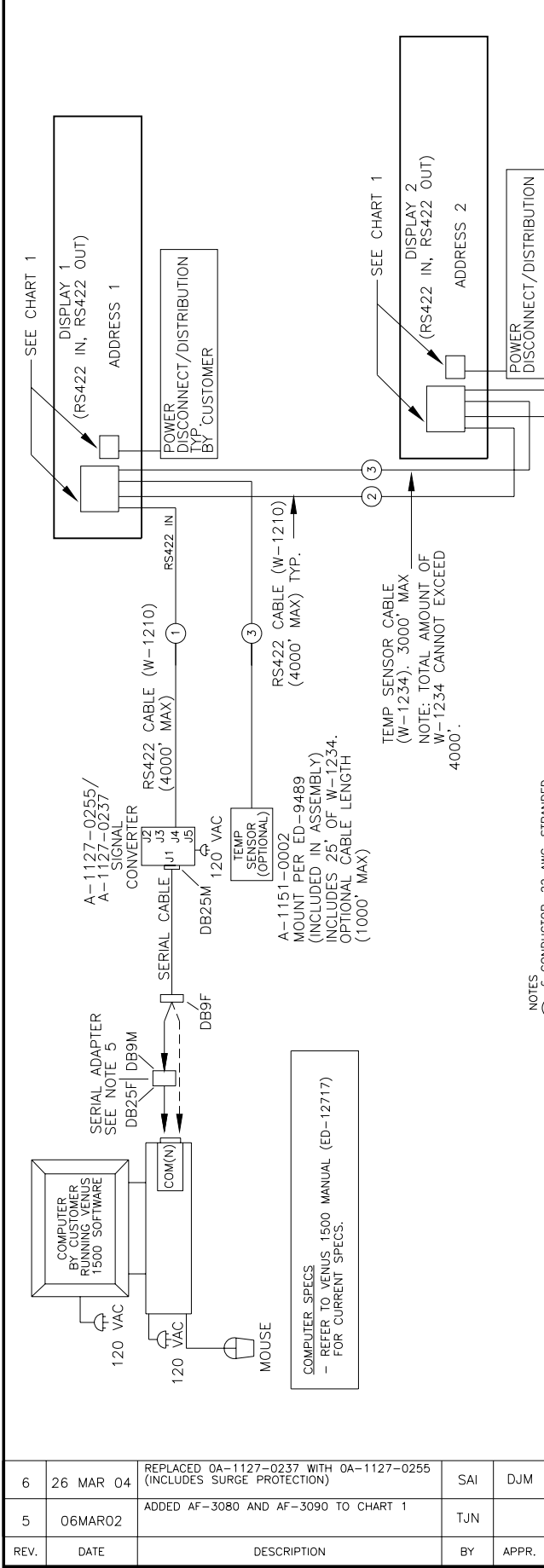
**DETAIL E**  
POWER CONNECTIONS

\*\* REFER TO DWG 1137-R01A-88425 FOR COMPLETE RS/422 SYSTEM RISER DIAGRAM

\*\* REFER TO DWG 1137-R01A-88426 FOR COMPLETE MODEM SYSTEM RISER DIAGRAM

3	13NOV01	ADDED "G-1000 ONLY" NOTE TO DETAIL E	LLK	LLK
2	28 MAY 98	REPLACED G1000 WITH V1500 IN TITLE BLOCK	JEM	RK
1	2 SEPT 97	ADDED DETAIL G. UPDATED RS/232 LABEL AND REARRANGED DRAWING.	CI	
REV.	DATE	DESCRIPTION	BY	APPR.

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>	
PROJ: OUTDOOR LED PRODUCT LINE	
TITLE: SYSTEM RISER DIAGRAM; PWR & SIG V1500 DISPLAYS	
DES. BY: JCOOK	DATE: 21NOV96
DRAWN BY: AMEYER	
REVISION	APPR. BY:
SCALE: NONE	<b>1137-R01A-88427</b>



- NOTES
1. 6 CONDUCTOR, 22 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1210), BELDON P.N. (9942) OR EQUIV. IN CONDUIT WHERE REQUIRED. FIELD SIGNAL TERMINATIONS TO BE PHOENIX FIELD CABLES ARE PINNED 1 TO 1 FROM ONE END TO THE OTHER.
  2. 6 CONDUCTOR, 22 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1210), BELDON P.N. (9942) OR EQUIV. IN CONDUIT WHERE REQUIRED. FIELD SIGNAL TERMINATIONS TO BE PHOENIX TERMINAL BLOCKS. FIELD CABLES ARE "FLIPPED" FROM ONE END TO THE OTHER.
  3. 4 CONDUCTOR, 22 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1234), MANHATTAN P.N. (M4473) OR EQUIV. IN CONDUIT WHERE REQUIRED. FIELD SIGNAL TERMINATIONS TO BE PHOENIX TERMINAL BLOCKS.

4. RS/422 CONTROL EQUIPMENT KIT INCLUDES: W-1249.....SERIAL CABLE ADAPTER A-1027-0265.....SIGNAL CONVERTER A-1146-0035.....NETWORK/CABLE TESTER

5. USE EITHER THE DB9 OR DB25, DEPENDING ON YOUR PC'S REQUIREMENTS.

6. INPUT TO CONVERTER IS RS232, OUTPUTS RS422.

7. ALL SIGNAL CABLES BY CUSTOMER. LABOR TO PULL WIRES BY CUSTOMER.

8. ALL POWER WIRES BY CUSTOMER. LABOR TO PULL WIRES BY CUSTOMER.

9. ALL WIRING TO MEET NEC AND LOCAL ELECTRICAL CODES. DISPLAYS MUST BE GROUNDED PER ARTICLE 250 AND 600 OF THE NATIONAL ELECTRICAL CODE.

CHART 1

DISPLAY TYPE	POWER CONN. DWG.#	SIGNAL CONN. DWG.#	POWER SPEC. DWG.#
G-1000	A-88427	A-88427	C-87896
X-1000	A-140262	A-88427	A-154944
AF-3010	A-140262	A-88427	A-154950
AF-3060-MONO	A-129227	A-129110	A-127440
AF-3060-RG	A-129227	A-129110	A-142449
AF-3065	A-154965	A-129110	A-148571
AF-3080 RED	NA	A-129110	A-163751
AF-3080 AMB	NA	A-129110	A-163306
AF-3090 RED	NA	A-129110	A-162439
AF-3090 AMB	NA	A-129110	A-158396

TEMP SENSOR CABLE (W-1234). 3000' MAX NOTE: TOTAL AMOUNT OF W-1234 CANNOT EXCEED 4000'.

TEMP SENSOR (OPTIONAL) A-1151-0002 MOUNT PER ED-9489 (INCLUDED IN ASSEMBLY) INCLUDES 25' OF W-1234. OPTIONAL CABLE LENGTH (1000' MAX)

COMPUTER SPECS - REFER TO VENUS 1500 MANUAL (ED-12717) FOR CURRENT SPECS.

REV.	DATE	DESCRIPTION	BY	APPR.
6	26 MAR 04	REPLACED 0A-1127-0237 WITH 0A-1127-0255 (INCLUDES SURGE PROTECTION)	SAI	DJM
5	06MAR02	ADDED AF-3080 AND AF-3090 TO CHART 1	TJN	

REVISION	APPR. BY:	SCALE:
06	NONE	NONE

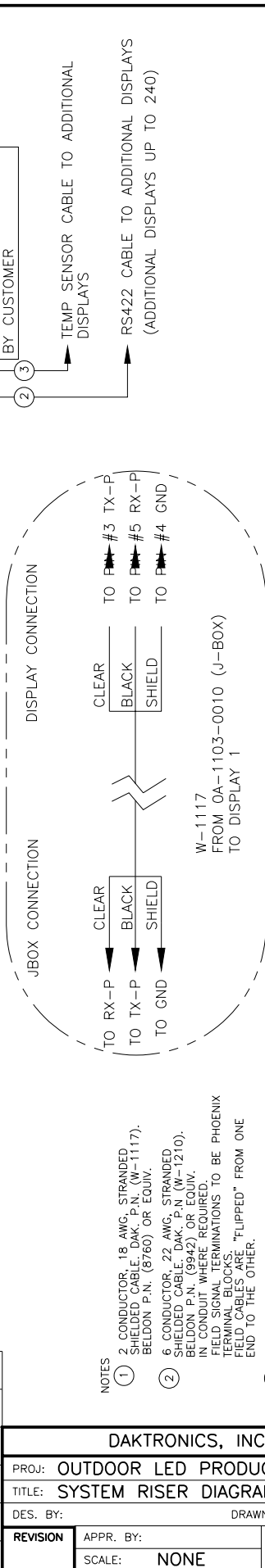
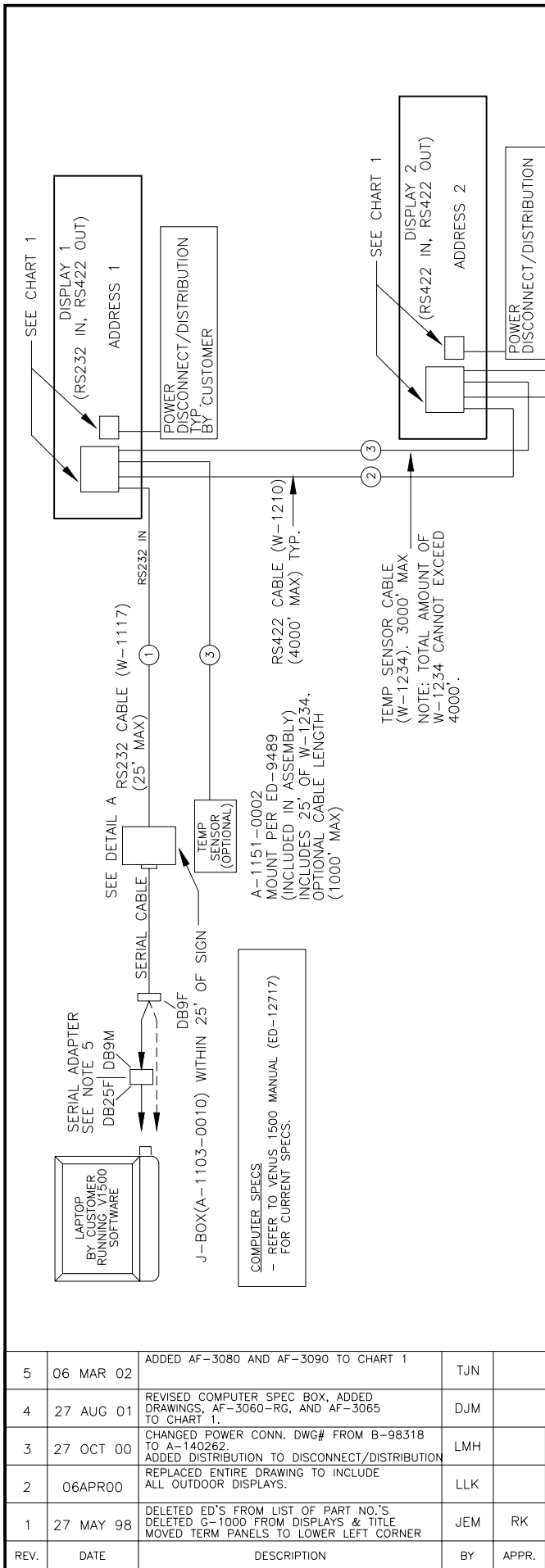
NO.	DATE	DESCRIPTION	BY	APPR.
4	27 AUG 01	REVISED COMPUTER SPEC BOX, ADDED DRAWINGS, AF-3060-RG, AND AF-3065 TO CHART 1.	DJM	
3	27 OCT 00	CHANGED POWER CONN. DWG# FROM B-98318 TO A-140262. ADDED DISTRIBUTION TO DISCONNECT/DISTRIBUTION	LMH	
2	06APR00	REPLACED ENTIRE DRAWING TO INCLUDE ALL OUTDOOR DISPLAYS	LLK	
1	27 MAY 98	DELETED ED'S FROM LIST OF PART NO.'S DELETED G-1000 FROM DISPLAYS MOVED TERM PANELS TO LOWER LEFT CORNER	JEM	RK

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED PRODUCT LINE  
 TITLE: SYSTEM RISER DIAGRAM, RS422  
 DES. BY: JCOOK DRAWN BY: AMEYER DATE: 30APR97

1137-R01A-92681



NOTES

- 2 CONDUCTOR, 18 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1117), BELDON P.N. (8760) OR EQUIV.
- 6 CONDUCTOR, 22 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1210), BELDON P.N. (9942) OR EQUIV. IN CONDUIT WHERE REQUIRED. FIELD SIGNAL TERMINATIONS TO BE PHOENIX TERMINAL BLOCKS. FIELD CABLES ARE "FLIPPED" FROM ONE END TO THE OTHER.
- 4 CONDUCTOR, 22 AWG, STRANDED SHIELDED CABLE, DAK. P.N. (W-1234), MANHATTAN P.N. (M4473) OR EQUIV. IN CONDUIT WHERE REQUIRED. FIELD SIGNAL TERMINATIONS TO BE PHOENIX TERMINAL BLOCKS.
- RS232 CONTROL EQUIPMENT KIT INCLUDES: SHIELDED SERIAL CABLE, DB9 TO DB25 ADAPTER A-1603, J-BOX A-1103-0010, NETWORK/CABLE TESTER A-1146-0005. USE EITHER THE DB9 OR DB25, DEPENDING ON YOUR PC'S REQUIREMENTS.
- INPUT TO J-BOX IS RS232, OUTPUT IS RS232.
- ALL SIGNAL CABLES BY CUSTOMER. LABOR TO PULL CABLES BY CUSTOMER.
- ALL POWER WIRES BY CUSTOMER. LABOR TO PULL WIRES BY CUSTOMER.
- ALL WIRING TO MEET NEC AND LOCAL ELECTRICAL CODES. MUST BE GROUNDED PER ARTICLE 250 AND 600 OF THE NATIONAL ELECTRICAL CODE.

CHART 1

DISPLAY TYPE	POWER CONN. DWG.#	SIGNAL CONN. DWG.#	POWER SPEC. DWG.#
G-1000	A-88427	A-88427	C-87896
X-1000	A-140262	A-88427	A-154944
AF-3010	A-140262	A-88427	A-154950
AF-3060-MONO	A-129227	A-129110	A-127440
AF-3060-RG	A-129227	A-129110	A-142449
AF-3065	A-154965	A-129110	A-148571
AF-3080 RED	NA	A-129110	A-163751
AF-3080 AMB	NA	A-129110	A-163306
AF-3090 RED	NA	A-129110	A-162439
AF-3090 AMB	NA	A-129110	A-158396

5	06 MAR 02	ADDED AF-3080 AND AF-3090 TO CHART 1	TJN	
4	27 AUG 01	REVISED COMPUTER SPEC BOX, ADDED DRAWINGS, AF-3060-RG, AND AF-3065 TO CHART 1.	DJM	
3	27 OCT 00	CHANGED POWER CONN. DWG# FROM B-98318 TO A-140262. ADDED DISTRIBUTION TO DISCONNECT/DISTRIBUTION	LMH	
2	06 APR 00	REPLACED ENTIRE DRAWING TO INCLUDE ALL OUTDOOR DISPLAYS.	LLK	
1	27 MAY 98	DELETED ED'S FROM LIST OF PART NO.'S DELETED G-1000 FROM DISPLAYS & TITLE MOVED TERM PANELS TO LOWER LEFT CORNER	JEM	RK
REV.	DATE	DESCRIPTION	BY	APPR.

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

PROJ: **OUTDOOR LED PRODUCT LINE**

TITLE: **SYSTEM RISER DIAGRAM, RS232**

DES. BY: **CIVERSEN** DRAWN BY: **CIVERSEN** DATE: **28 AUG 97**

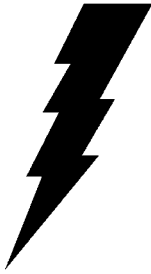
REVISION APPR. BY: SCALE: **NONE**

**1137-R01A-96058**

# Section 4: Maintenance & Troubleshooting

---

## IMPORTANT NOTES:



1. Disconnect power before any repair or maintenance work is done on the display!
2. Any access to internal display electronics must be made by qualified service personnel.
3. The Daktronics product manager's engineering staff must approve any changes that may affect the weather tightness of the display. This includes, but is not limited to, the border shrouding and back sheets. If ANY modifications are made to the weather tightness of the display, detailed drawings of the changes **MUST BE** submitted to our engineering staff for evaluation and approval or the warranty will be null and void.
4. Care must be taken when handling the display's face panel to prevent any injuries or damage, especially in windy conditions.

### 4.1 Weather Stripping

---

To ensure that the display is waterproof, weather stripping has been provided around the entire display and around the individual lines. It is important that the weather stripping is installed properly at all times or water may leak into the display and damage components.

### 4.2 Module Numbering Convention

---

**Figure 3** shows the module numbering convention. A module is six pixels high by sixteen pixels wide, with the driver board attached. A, B and C designate modules for each face on a multiple face display.

A101	A102	A103	A104	A105	A106	<b>Line 1</b>
A201	A202	A203	A204	A205	A206	<b>Line 2</b>
A301	A302	A303	A304	A305	A306	<b>Line 3</b>

1. Labeling reference begins with the upper left module and increments to the right and down from that point, independent of the display size.
2. Modules are designated by the prefix "A". A101 represents the upper left module.
3. The hundreds digit indicates the display line number. A101 through A106 make up the first display line, A201 through A206 make up the second display line and so forth.

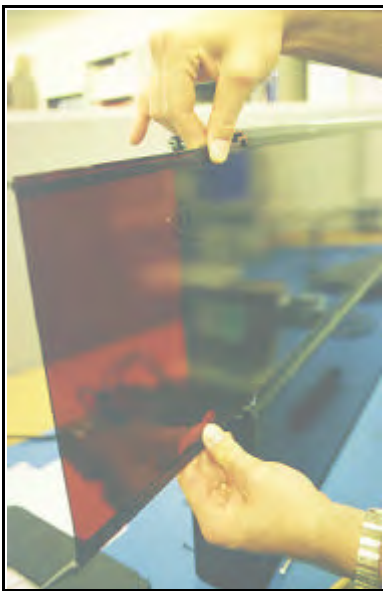
**Figure 3:** Module Identification Numbering Convention

### 4.3 Display Access/Module Removal

To access the display, some of the modules will need to be removed. Refer to the following instructions to remove a module:



**Figure 4:** Removing the end cap



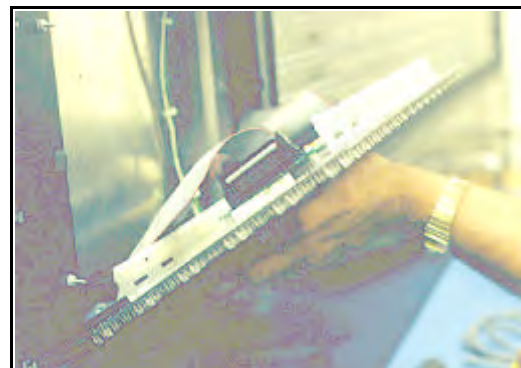
**Figure 5:** Sliding out the face panel.

1. Remove the screws from the end cap for the line on the side farthest from the module (refer to **Figure 4**) to be removed. Detach the end cap.
2. Slide the face panel out until it passes the desired module (refer to **Figure 5**). **Note:** Care must be taken when handling these long face panels to prevent damage and injuries. Take extra precautions during windy conditions.
3. Remove the four mounting nuts. There is one located in each corner of the module (refer to **Figure 6**).
4. Carefully pull the module forward so that the connections can be unplugged (see **Figure 7**).

To install or replace the modules, follow the above steps in reverse order.



**Figure 6:** Removing the mounting nuts.



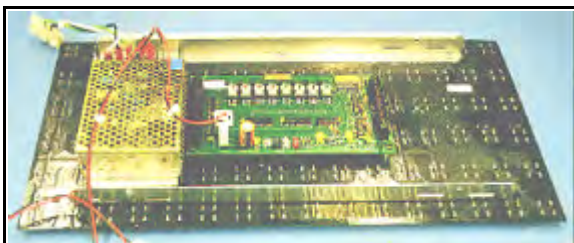
**Figure 7:** Opening the display

## 4.4 LED Driver Replacement

The LED driver is located on the rear side of the module (refer to **Figure 8**).

1. Remove all power and signal connections from the board. The connectors can be released by squeezing together the locking tabs, then gently pulling the connector free (refer to **Figure 9**).
2. Remove the four corner #6 screws.
3. Take note of the driver's orientation.
4. Carefully remove the driver from the display board. Use an even force to prevent any damage due to bending of the connector pins on the display board.

Reverse the above steps to replace the driver.

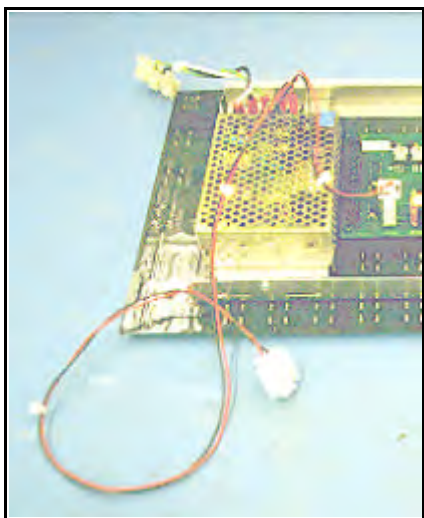


**Figure 8:** Rear View; Display Module



**Figure 9:** Removing the signal connections

## 4.5 Power Supply



**Figure 10:** Module Power Supply

The power supply is mounted on the back of every other module. The first power supply is located behind module A\*02 (\* is the number of the line. Refer to **Section 4.2**). This unit supplies power to modules A\*01 and A\*02. The remaining power supplies are located behind A\*03, A\*05, A\*07 and A\*09. The power supplies connect to the module they are located behind and the one to the right of it (as seen from the front view). This pattern is consistent for each line.

Refer to **Section 4.3** for information on removing a module. Once the module has been removed from the display:

1. Remove the ground wire from the ground nut.
2. Unplug the two power wires.
3. Place the module face down on a soft, flat surface.
4. Remove the power module by removing the single screw on the bottom L-bracket.
5. Pull and slide out the power module.

Follow the above steps in reverse order to install a new power supply.

## 4.6 Controller Board

### 4.6.1 Accessing and Replacing the Controller Board

**Reference Drawings:** System Riser Diagram (422) . . . . . **Drawing A-88425**  
Overall Dimensions; G-1000 . . . . . **Drawing A-88154**

The controller board is located behind the module on the far left side of the bottom row (front view). Refer to **Drawing A-88425 (Section 3)**.

1. To access the board, first remove the module in front of the controller board (refer to **Section 4.3**).
2. Remove all power and signal connections. “Locked” connectors can be released by squeezing together the tabs, then carefully pulling them from the jack.
3. Remove the ground mounting screw on the right side.
4. Slide the board out the end of the display.

Follow the above steps in reverse order to install a new controller board.

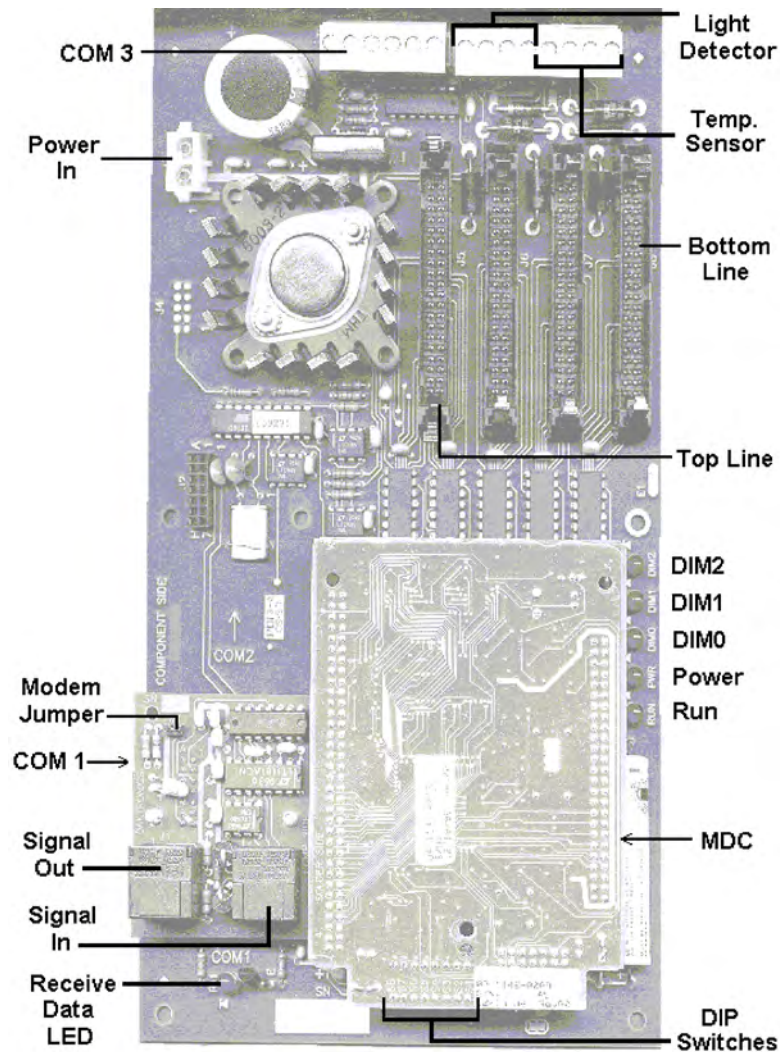


Figure 11: Controller Board

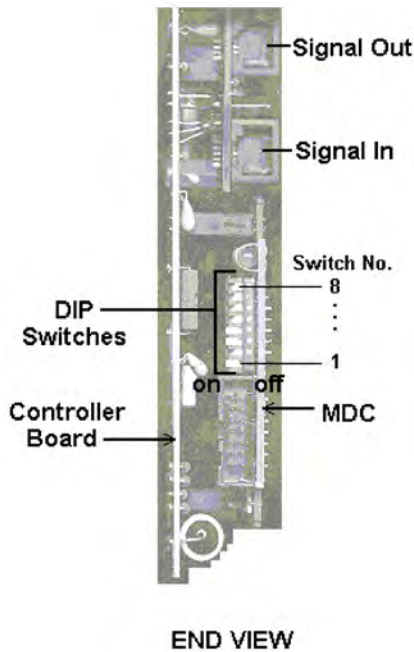


## 4.6.2 LED's and Jumpers

The controller board contains three (3) DIM, one (1) Power, one (1) RUN, and one (1) Receive Data LED's. They are located as shown in **Figure 11**.

The controller's communication module contains a jumper for a modem system. The jumper must jump both pins for a modem system. For all other applications, the jumper must be removed.

## 4.6.3 Controller Address and Test Mode



Before a display can be run in a sign network, it must have an "address." The display address can be set by the use of "DIP" switches located on a PC board known as the MDC. The MDC is the circuit card mounted in the lower right corner of the controller board (as seen in **Figure 11**).

Locate the DIP switches on the MDC. They should be on the bottom end of the card (if it is oriented as shown in **Figure 11**). Refer to **Figure 12** for a picture of the DIP switches.

When replacing a controller board, be sure to set the DIP switches in the same address configuration as the defective controller.

**Note:** A test mode can be activated by setting the DIP switches to address 0 (flip all the switches toward the numbers on the circuit board). The display's power must be downed, then reconnected to run the test mode.

**Figure 12:** Location of DIP Switches

Address	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	Switch 6	Switch 7	Switch 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
...	...	...	...	...	...	...	...	...
127	ON	ON	ON	ON	ON	ON	ON	ON



## 4.7 Light Detector

**Reference Drawings:** Schematic . . . . . **Drawing C-87896**  
Overall Dimensions; G-1000 . . . . . **Drawing A-88154**

The light detector is internally mounted and wired at Daktronics. It is located behind the lower left (front view) module bracket (**Drawing A-88154, Section 1**). A 4-conductor cable is used to connect the light detector to the display. The cable is terminated at the terminal block on the light sensor and at the terminal block on the controller board (Refer to **Drawing C-87896**).

Light Detector Pin No.	Cable Wires Color	Controller Board Pin No.
1	Green	3
2	White	4
3	Red	1
4	Black	2
N.C.	Bare	2

## 4.8 Transformer

The transformer is used to provide power to the controller board (refer to **Section 4.6**). It is located in the bottom left corner (front view) of the display.

## 4.9 Modem

### 4.9.1 Accessing and Replacing the Modem

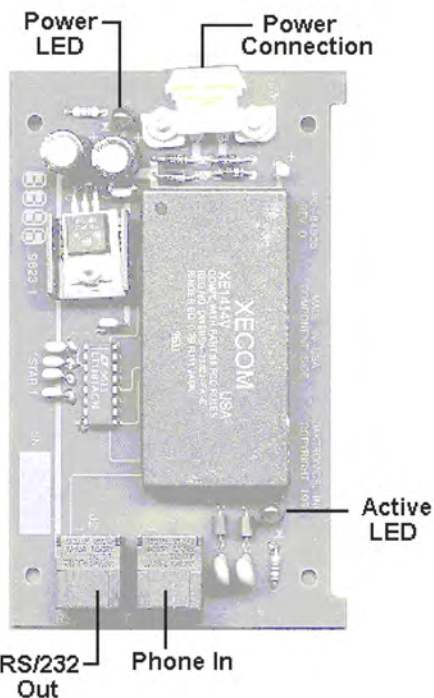


Figure 13: Modem

If a modem was included with your display, it is located inside the display next to the controller board.

1. To replace a modem, first disconnect the power and signal connections (refer to **Figure 13** for disconnection of power).
2. The modem is held in place with the use of plastic rails known as “snap track.” Carefully “snap” the modem out of the rails.
3. Insert the new modem by first laying one end into the rails of the “snap track,” then pivot it around and snap into place.

## 4.9.2 LED's and Jumpers

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The modem module has two (2) LED's. The Power LED should remain lit while power is applied to the module. The Active LED will light when the modem is being initialized and when it is in the process of communicating.

A modem system requires a jumper to be set on the controller board. Refer to **Section 4.6** for this jumper setting.

## 4.10 Structural Inspection

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Visual inspection should be done annually to check paint and possible corrosion, especially at footings, structural tie points and ground rods. Fasteners should be checked and tightened or replaced as required.

At least once a year, check the inside of the display for sign of water intrusion, i.e. water stain marks. Water can enter a display where weather stripping has come loose or deteriorated, where fasteners may have come loose allowing gaps in the panels, or where moisture may be entering around hardware which is in the top of the display. Check the electronic components for signs of corrosion.

## 4.11 Troubleshooting

---

Symptom/Condition	Possible Cause/Remedy
One or more individual LED pixels will not light.	⊘ Replace display board.
A column of LED pixels will not light.	⊘ Replace driver board.
A row of pixels will not light.	⊘ Replace driver board.
A section of the display is not working. Section extends all the way to the right side of the display.	⊘ Replace the first driver on the left side of the module that is not working. ⊘ Replace the second driver that isn't working. ⊘ Replace the power supply on the first module on the left side of the module that is not working. ⊘ Replace ribbon cable.
Entire display is garbled.	⊘ Replace the InfoNet controller board.
A single line is garbled.	⊘ Replace the first driver on the left side of the display of the bad line. ⊘ Replace the InfoNet product board.
Two modules (which share power supplies) will not light up.	⊘ Replace power supply.
Entire display does not work.	⊘ Check 120VAC to display. ⊘ Check 12VAC to InfoNet product board.
Controller not operating properly.	⊘ Refer to Venus 1500 Operation manual ( <b>ED#9067</b> ).
Temperature always reads 32°F/0°C	⊘ Check temp sensor connections. ⊘ Replace temp sensor. ⊘ Replace InfoNet product board.

Display is stuck on bright or dim.	<ul style="list-style-type: none"> <li>Ⓒ Check Manual/Auto dimming.</li> <li>Ⓒ Check light detector cable.</li> <li>Ⓒ Replace light detector.</li> <li>Ⓒ Replace controller board.</li> </ul>
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#### 4.12 Boot Up Initialization Information

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When first powered up, the display will run through an initialization in which it will display the following:

1. Output Test (DDD's)
2. Display Model Number (i.e. G-1000-3-6x96)
3. Firmware Version
4. COM1 Configuration (Typically V1500)
5. COM2 Configuration (Either DataView or RTD)
6. Power Line Frequency (e.g., 60 Hz)
7. Display Address
8. Sign Name
9. Modem (if present)

#### 4.13 Replacement Parts

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Parts Description	Daktronics Part #
Controller Board (422)	0A-1137-0017
Controller Board (232 or Modem)	0A-1137-0016
LED Driver Board	0P-1137-0001
LED Display Board	0P-1137-0002
Light Detector	0P-1151-0002
Modem	0P-1146-0003
Power Supply	0A-1137-0003
Ribbon Cable; Controller to Bottom Line	W-1362
Ribbon Cable; Controller to other lines	W-1241
Ribbon Cable; Between modules	W-1362
Serial Cable	W-1363
Temperature Sensor	0P-1151-0003
Signal Converter (RS232/RS422)	0A-1127-0237

#### 4.14 Unit Exchange/Replacement Procedure

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Daktronics unique exchange program was designed with the client's needs in mind. This is the quickest and most economical way available for product repair. If a component has failed, Daktronics will send the customer a replacement. The customer, in turn, sends the failed components to Daktronics. This not only saves money but also decreases the amount of time that the display is inoperable. Daktronics offers a repair and return on a timely basis, but in urgent situations, every attempt is made to ship by the fastest transit method available.

1. **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 either be installed in an enclosure or should be put in an anti-static bag before boxing.

Please enclose your name and address with all symptoms listed as best you can describe them.

2. **LED Display Board or Driver Board Packaging Instructions:** LED modules should be placed in a static-free enclosure for return shipping. An anti-static convoluted foam packing is available from Daktronics, part number PK-1135 for your use if needed. The shipping box (Daktronics part number PK-1006) should be used in conjunction with the foam.
3. **Where to Send:** To return parts for service, contact your local representative prior to shipment to acquire a Return Material Authorization Number (RMA#). This will speed up the repair of your unit.

For return of defective items under the exchange program, please utilize the UPS Blue Return Tags found in the package containing the exchange unit sent from Daktronics. This will speed up the transaction and will also avoid any confusion when the part is returned to Daktronics. **@ The defective item must be returned within 15 days of receiving a replacement part.** Using the UPS Blue Return Tag immediately will eliminate the possibility of late charges being assessed against your account.

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

**Phone:** Toll Free: 1-800-843-9879  
or 1-605-697-4400

**Customer Service Fax:** 1-605-697-4444

**E-Mail:** helpdesk@daktronics.com





# Appendix A: Optional Temp Sensor

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## Electrical Installation

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**Reference Drawings:** System Riser Diagram (422) . . . . . **Drawing A-88425**  
System Riser Diagram (Modem) . . . . . **Drawing A-88426**  
Power/Signal Termination Panel . . . . . **Drawing A-88427**

A 4-conductor cable with shield is used to connect the temp sensor to the display. The cable is terminated in the entrance enclosure on the terminal block labeled “TEMP SENSOR.”

TB42	Cable Wires	Temperature Sensor
Pin 7	Green	(Temp RX-P)
Pin 8	White	(Temp RX-N)
Pin 9	Red	(Temp +5V)
Pin 10	Black	(Temp GND)
Pin 10	Bare	N/A

If the display is two sided, only one temp sensor is used for both. An extra piece of the 4-conductor cable must be used to jumper the temp sensor data to the second sign. Refer to Drawings A-88425, A-88426, A-88427 (all in **Section 3**) for connections. **Note: DO NOT connect the red, black or shield wires in the jumper to the second sign.**





# Appendix B: G-1000 Design Prior to November 1, 1996

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Daktronics is continually making improvements to our display technologies to offer the highest quality and latest technology in our products. The following items have been changed in the manual to reflect the newest design. If your G-1000 display was manufactured prior to **November 1, 1996**, please follow the manual *except* for the items listed in **Appendix B**.

## Display Changes:

- C Cabinet dimensions, refer to **Drawing B-78565**.
- C Face panel dimensions, refer to **Drawing A-88101**.
- C Light detector location, refer to **Drawing B-78102**.
- C Entrance enclosure layout, refer to **Drawing A-76570**.
- C Entrance enclosure location, refer to **Drawing B-78565**.
- C Light detector wiring as below.
- C Temperature sensor wiring as below.

Termination Panel .....	<b>Drawing A-76570</b>
Face panel Replacement .....	<b>Drawing A-88101</b>
Mechanical Layout .....	<b>Drawing B-78565</b>
Wiring Schematic .....	<b>Drawing B-78102</b>

## Light Detector

---

The light detector must be mounted near the display so that the light detector is facing the same direction as the face of the display. A 4-conductor cable is used to connect this light detector to the display. The cable is terminated on the controller board on the terminal block labeled "TB2." Refer to **Drawing A-76570**.

Terminal Block In		
Pin 1	Red	(Photo +5V)
Pin 2	Black	(Photo GND)
Pin 2	Bare	N/A
Pin 3	Green	(Photo RX-P)
Pin 4	White	(Photo RX-N)

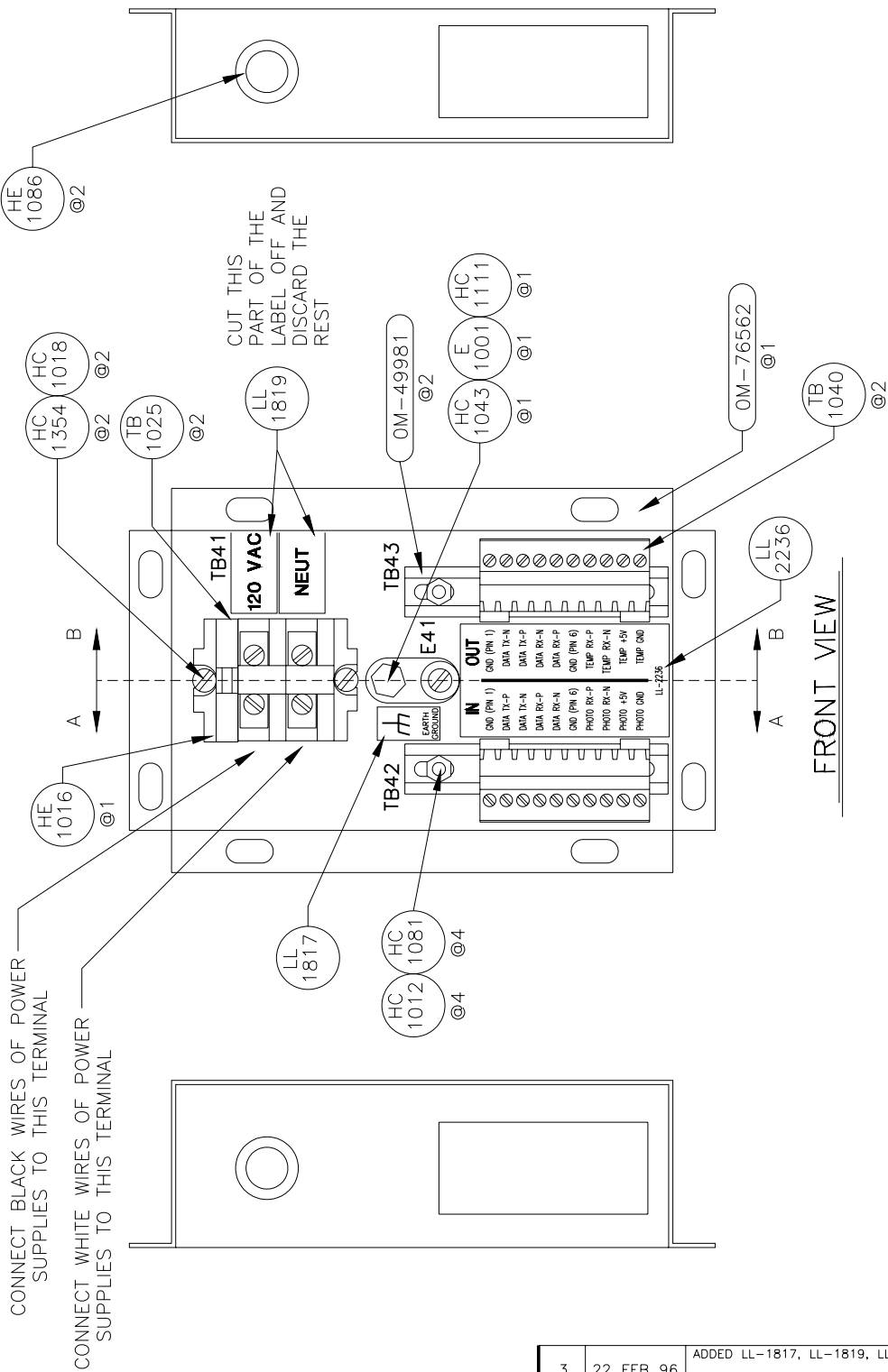
**Note:** If the display is two sided, each side has its own light detector.

## Temperature Sensor

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The temperature sensor is wired into TB43 as shown below.

Terminal Block In		
Pin 7	Green	(Temp RX-P)
Pin 8	White	(Temp RX-N)
Pin 9	Red	(Temp +5V)
Pin 10	Black	(Temp GND)
Pin 10	Bare	N/A



COMM. CARD ATTACHES TO PRODUCT BOARD PER DWG A-78731

3	22 FEB 96	ADDED LL-1817, LL-1819, LL-2236.	NJA
2	15 FEB 96	INCREASED HEIGHT BY 1". ADDED TB-1040 AND OM-49981. OBROUNDED MTC HOLES. REMOVED W-1285 AND J-1190.	NJA
1	27 DEC 95	MOVED TB41 TO CENTER OF BOX AND DOWN 1/4". ROTATED E41 DOWN.	CI

6	13 MAY 96	REMOVED WIRING DETAILS.	MWM	
5	2 APR 96	ADDED PHONE PLUG CABLING DETAIL.	MER	
4	1 APR 96	MIRRORED WIRE COLORS FOR SIGNAL TO TB42 AND TB43 FROM COMM MODULE.	MER	
REV.	DATE	DESCRIPTION	BY	APPR.

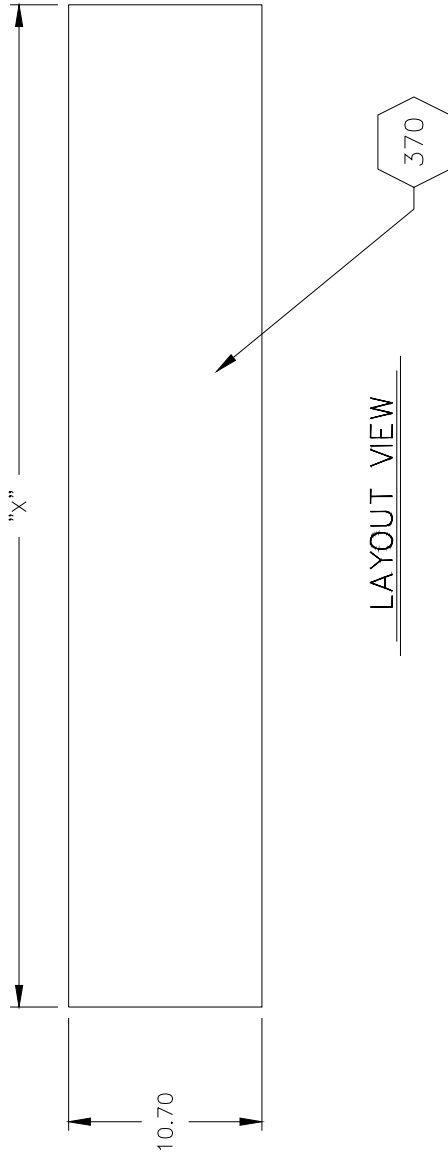
**DAKTRONICS, INC. BROOKINGS, SD 57006**

PROJ: \_\_\_\_\_

TITLE: **ASSEMBLY, ENTRANCE, REAR ACCESS, OUTDOOR INFONET**

DES. BY: \_\_\_\_\_ DRAWN BY: **NJA** DATE: **7 NOV 95**

<b>REVISION</b>	APPR. BY: _____	<b>1137-E10A-76570</b>
	SCALE: <b>1=2</b>	



LAYOUT VIEW

DISPLAY SIZE	REPLACEMENT POLYCARBONATE PACKET	DRAWING #	DIMENSION "X"
G-1000-* -6x48-9	OA-1137-0178	88101-A	55.17"
G-1000-* -6x64-9	OA-1137-0179	88101-B	73.56"
G-1000-* -6x80-9	OA-1137-0180	88101-C	91.95"
G-1000-* -6x96-9	OA-1137-0181	88101-D	110.34"
G-1000-* -6x112-9	OA-1137-0182	88101-E	128.73"
G-1000-* -6x128-9	OA-1137-0183	88101-F	147.12"

NOTES:

USE STOCK FACE PANELS AND CUT TO LENGTH PER OA-PACKET.

REV.	DATE	DESCRIPTION	BY	APPR.
03	10JUN99	REPLACED THE OX-PACKETS WITH NEW OA-PACKETS. CHANGED HEX-355 TO HEX-370.	MDM	
02	19MAY97	UPDATED DESCRIPTIONS TO SHOW REPLACEMENT PLEX PACKETS AND REVISED NOTE.	AJM	
01	14FEB97	UPDATED DESCRIPTIONS FOR CLARITY	JWO	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: 9" OUTDOOR INFONET

TITLE: PLEX, OLD DIMENSIONS (BEFORE NOV. 1, 96)

DES. BY: SROUSH DRAWN BY: SROUSH DATE: 12NOV96

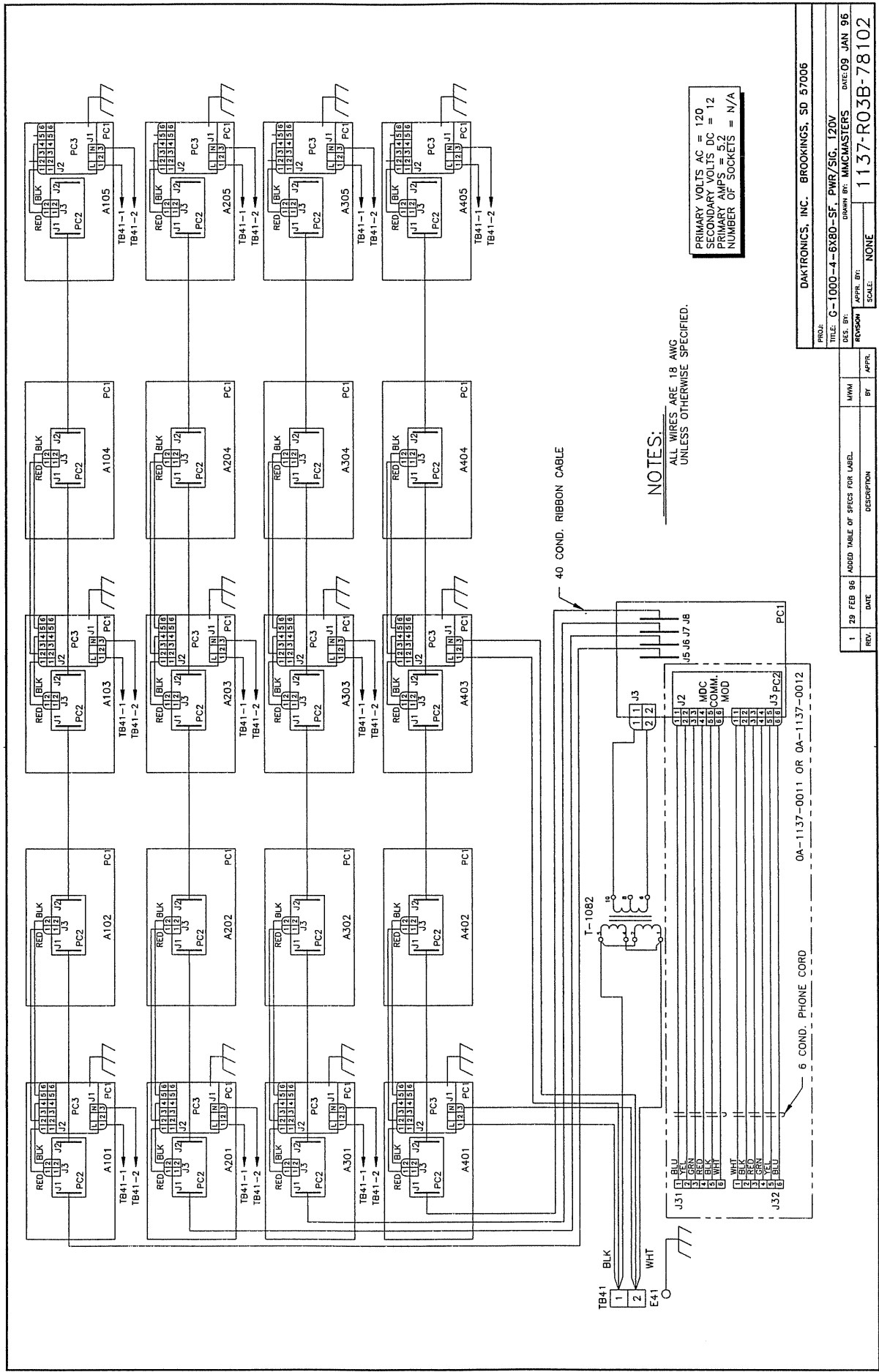
REVISION

APPR. BY:

SCALE: 1=10

1137-E07A-88101





**NOTES:**  
ALL WIRES ARE 18 AWG  
UNLESS OTHERWISE SPECIFIED.

PRIMARY VOLTS AC = 120  
SECONDARY VOLTS DC = 12  
PRIMARY AMPS = .52  
NUMBER OF SOCKETS = N/A

PROJ:	DAKTRONICS, INC. BROOKINGS, SD 57006		
TITLE:	G-1000-4-6X80-SF_PWR/SIG_120V	DATE:	09 JAN 96
DES. BY:	RAMON	APP. BY:	MM
SCALE:	NONE	DATE:	11 37-R03B-78102

REV.	DATE	DESCRIPTION	BY	APP.
1	29 FEB 86	ADDED TABLE OF SPECS FOR LABEL.	MM	

# Appendix C: RS/422 System (Old Signal Converter)

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Daktronics is continually making improvements to our display systems in order to offer the highest quality and latest technology in our products. This appendix covers the connections between the first display and the Venus 1500 computer using the older signal converter.

**Reference Drawings:** System Riser Diagram (RS/422) . . . . . **Drawing A-88425**  
 Signal/Power Termination Panel . . . . . **Drawing A-88427**

One end of the signal cable should be terminated to the 10 position terminal block labeled "DATA IN." **Drawing A-88425** is an example of the termination panels. The other end is terminated at the signal converter cable (Daktronics part number 0A-1137-0106) in the control room.

Pin No.	Field Cabling	Terminal Block (Data In)
Pin 1 (white) (Data TX-P)	White	Pin 4 (Data RX-P)
Pin 2 (blue) (Data TX-N)	Blue	Pin 5 (Data RX-N)
Pin 3 (green) (GND)	Green	Pin 6 (GND)
Pin 4 (black) (Data RX-P)	Black	Pin 2 (Data TX-P)
Pin 5 (brown) (Data RX-N)	Brown	Pin 3 (Data TX-N)
Pin 6 (red) (GND)	Red	Pin 1 (GND)

