

InfoNet™ Indoor Single Line Displays Series G-100 & G-200

Installation and Maintenance Manual

ED-10190

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Section 1: Introduction

1.1 How To Use This Manual

This manual is designed to explain installation of Daktronics InfoNet™, indoor single line LED displays controlled by a Venus® 1500 controller. 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.

The box below illustrates 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 the last set of digits and the letter preceding them. In the example below, the drawing would be referred to as **Drawing A-69945**. Reference drawings will be inserted at the *end of the first section which references them*.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ:		
TITLE:		
DES. BY:	DRAWN BY: DOK	DATE: 04-20-95
APPR BY:	7087-P08A-69945	
SCALE: 1=80		

1.2 Safety Precautions

1. Read and understand these instructions before installing.
2. Be sure that the display is properly grounded.
3. Disconnect power before working on the display.
Note: This display is *not* field serviceable. Contact Daktronics customer service for repair.
4. Do not modify the displays or attach any panels or coverings to the display without the express written consent of Daktronics, Inc.
5. Most products are equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a qualified electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

1.3 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 reasons for this growth are many, but the need for additional features and complexity of multiple sign installations has emerged, and the Daktronics display systems have been designed to meet those needs. The common thread to most clients' requests is a means of programming and controlling a group of signs from a central control point. Daktronics responded by developing a powerful system of interconnecting and controlling signs. Great care has been taken to design products that will satisfy a wide variety of installations. Some of the design goals of these systems include the following:

- Easy transfer of messages
- The ability to tell a sign or group of signs in the network which message should run
- The ability to determine the status of any sign on the network
- The ability to control multiple sign technologies on the same network

All of the programming features would seem insignificant if the installation of the systems could not be accomplished with basic tools and without technical difficulty. Daktronics decided to use the very popular and readily available RJ11 connector. This connector is also used on modern home and office telephone equipment.

All that is required for signal installation is standard six (6) conductor modular telephone wire and a tool to install the connector. Tools required for mounting the display depend on the location and size of the display. For some installations, it may be possible to buy pre-terminated telephone cables for use with the displays.

There are four (4) network systems available: RS/232, RS/422, modem and TCP/IP.

RS/232 Network

Reference Drawings:

System Riser Diagram; RS/232 **Drawing A-92268**

RS/232 (EIA/TIA-232-E) is a standard communication interface that employs a single-ended serial transmission scheme that uses a maximum cable length of 10 meters (30 feet). This interface was designed for computer communication at short distances. All computers have an RS/232 communications port.

RS/422 Network

Reference Drawings:

System Riser Diagram; RS/422 **Drawing A-92267**

RS/422 (EIA/TIA-422-B) is a standard communication interface that utilizes a differential balanced transmission scheme which uses a typical maximum cable length of 1.2 km (approximately 4000 feet). The main advantage to RS/422 over RS/232 is the longer cable length that is possible. A signal converter is needed to convert the computer's RS/232 to RS/422.

Modem Network

Reference Drawings:

System Riser Diagram; Modem **Drawing A-92570**

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 controller and display.

TCP/IP Network

Reference Drawing:

System Riser Diagram; TCP/IP **Drawing A-95515**

The TCP/IP protocol is an interface allowing the Ethernet network card (installed in the operator's computer) to communicate with the serial server via a Local Area Network (LAN). Information for the individual displays is distributed from the serial server's RS/232 and output.

1.4 Display Overview

The Daktronics Indoor LED displays have been designed and manufactured for performance, reliability, easy maintenance and long life. The displays consist of an array of LED pixels. The configuration of the LED pixels is dependent on the family of LED displays. The standard character is seven pixels high by five pixels wide.

A typical system consists of a Windows® based personal computer (PC) running Venus 1500 software and one or more displays. The PC controls one or more InfoNet displays. The displays are offered as single-face displays, which are single-sided stand-alone units. They can become double-faced by mounting them back-to-back with a second unit.

The Venus 1500 is a software package which runs under Windows 3.1x or Windows 95® operating systems on an IBM®-compatible computer. Refer to the Venus 1500 controller manual, **ED 9067**, for installation and maintenance of the Venus 1500 editing station.

InfoNet single line displays are character-based indoor LED displays which are available in monochrome red or tri-color (red, green and amber) characters. Daktronics offers single line displays with a 2.1@ character in five (5) different lengths. The InfoNet model numbers are described as follows: **G-X00-1-7xLLL-2.1**

G	=	InfoNet Line Display
X00	=	100 = Indoor Monochrome Red 200 = Indoor Tri-Color
1	=	One Line
7	=	Seven Rows High
LLL	=	Number of columns long (80, 120, 160, 200 and 240 are available)
2.1	=	2.1" Character Height

1.5 Part Definitions

COM Port: A *COM Port* is a connector on the back of the controller PC. The COM Port is used to control the sign *network* through either a 9 or 25 pin serial connector.

Display Configuration: *Display configuration* refers to a display's model number, address, etc. This information will be automatically displayed when the display is powered up.

Display configuration is as follows:

1. Output Test (DDD=)
2. Display Model Number (i.e. G-100-1-7x120)
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--displayed in binary code (i.e. 001)
8. Sign Name

Flipped Cable: The *flipped cable* is a six (6) conductor phone cable. Pin 1 of connector A connects to pin 6 of connector B.

LAN: Local Area Network

Loop Back Test: The *loop back test* is a troubleshooting test which connects the output to the input. Contact Daktronics customer service for this test.

Network: A *network* consists of multiple signs connected to each other. Up to 240 Venus 1500 controlled displays can exist on one network.

RS/232: *RS/232* is a standard PC communication type with a maximum cable length of 30 feet (10 meters).

RS/422: *RS/422* is a standard differential communication type with a maximum cable length of 4000 feet (1.2 kilometers).

RX LED: A *RX LED* is an LED on the signal converter which indicates if the display is sending data back to the *signal converter*.

Serial Server: A *serial server* is a device used to obtain information off of a *LAN*.

Sign Address: The *sign address* is an identification number assigned to each sign of a *network*. 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.

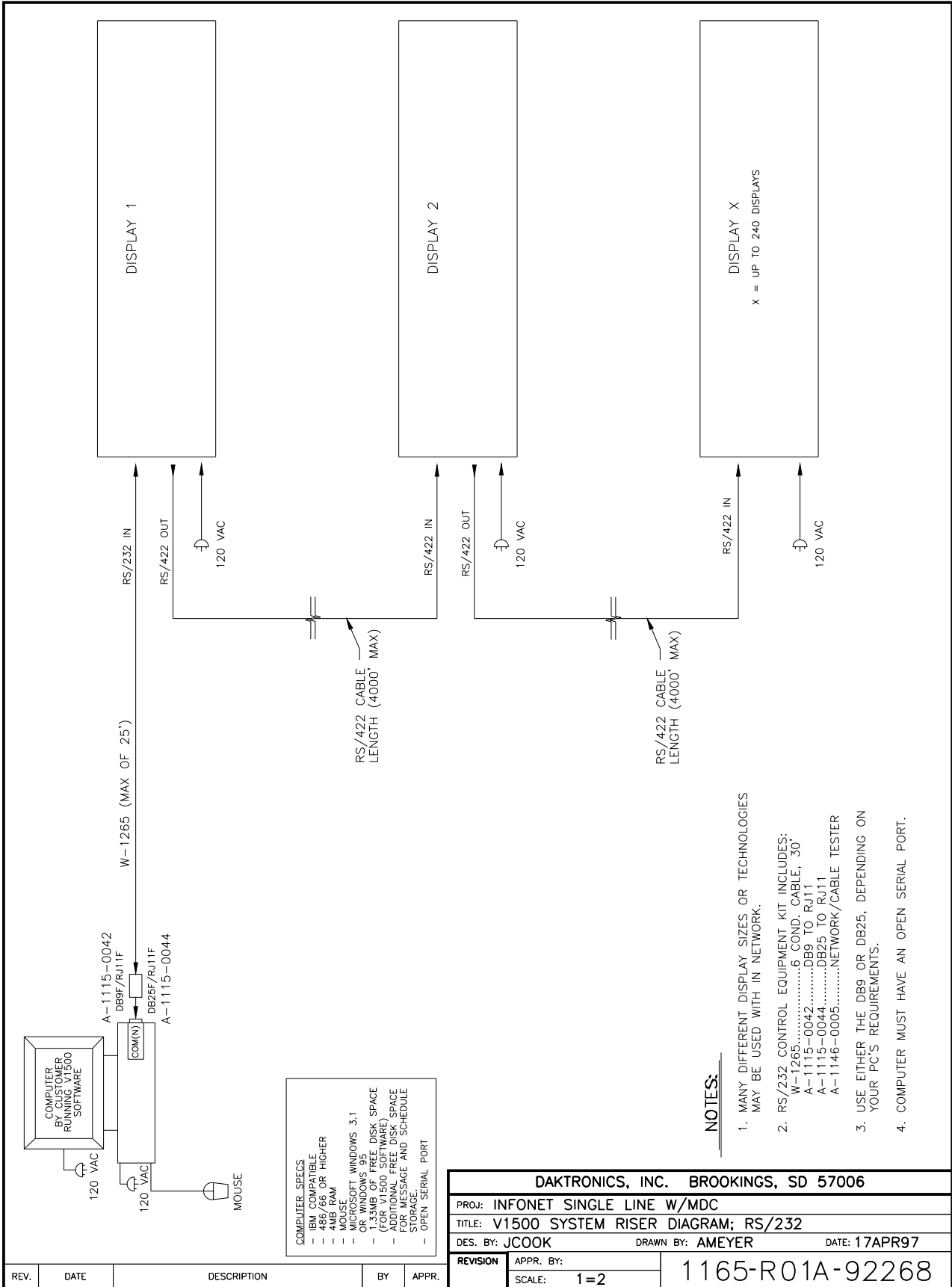
Signal Cable Tester: The *signal cable tester* is used to test the cable connections and data communication.

Signal Converter: The *signal converter* is a Daktronics supplied unit which converts the data from *RS/232* to *RS/422*. The signal converter is used in *RS422* systems.

TCP/IP: The *TCP/IP* (Transmission Control Protocol/Internet Protocol) is a communications protocol used for *LAN*'s.

TX LED: A *TX LED* is a LED on the serial converter which indicates the control PC is sending data to the display.

Venus 1500: The *Venus 1500* is a Daktronics designed, Windows based software used to edit the messages on the displays.



COMPUTER SPECS

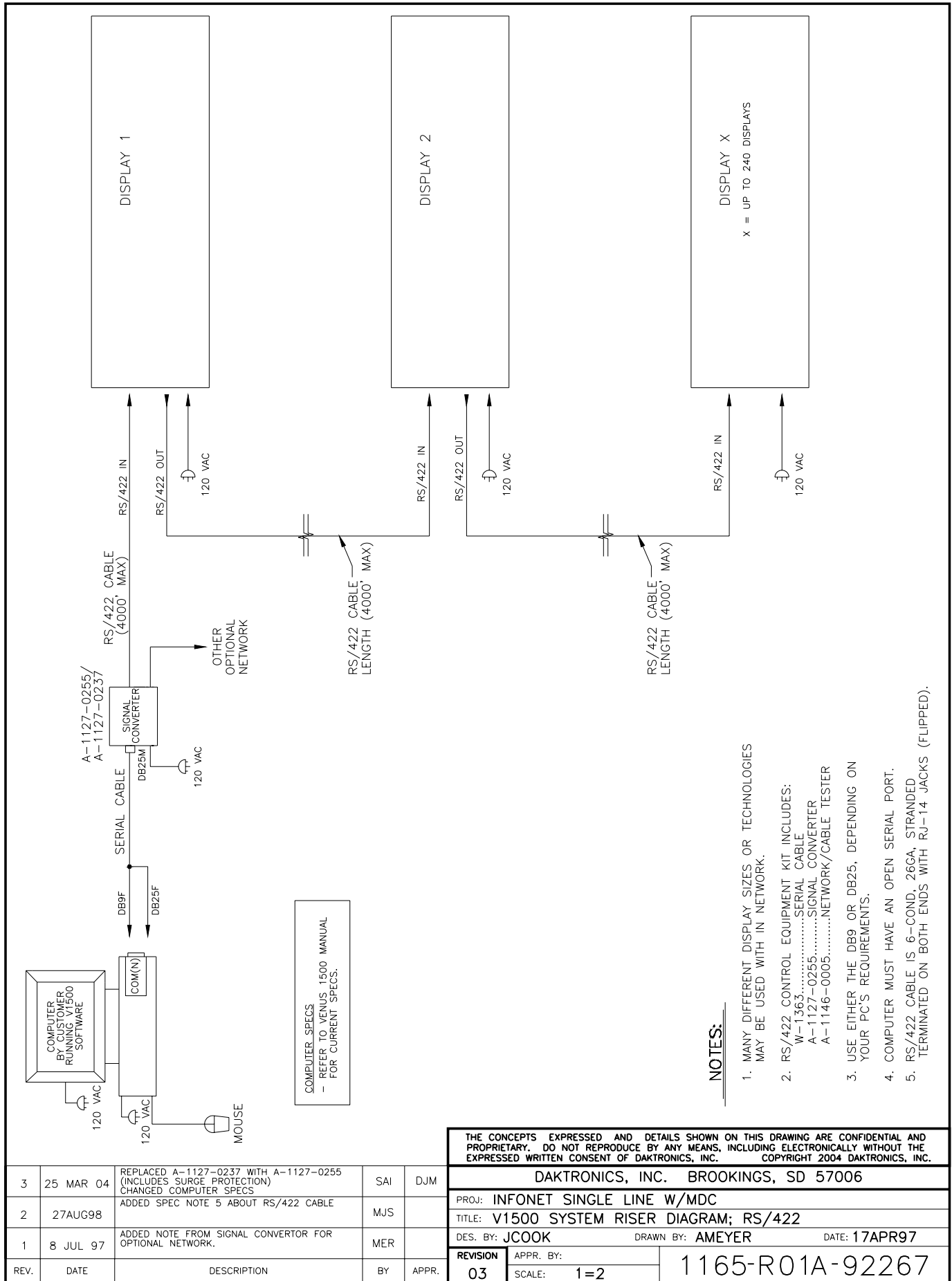
- IBM COMPATIBLE
- 486/66 OR HIGHER
- 4MB RAM
- M/S
- MICROSOFT WINDOWS 3.1 OR WINDOWS 95
- 1.33MB OF FREE DISK SPACE (FOR V1500 SOFTWARE)
- ADDITIONAL FREE DISK SPACE FOR MESSAGE AND SCHEDULE PRINTING
- OPEN SERIAL PORT

NOTES:

1. MANY DIFFERENT DISPLAY SIZES OR TECHNOLOGIES MAY BE USED WITH IN NETWORK.
2. RS/232 CONTROL EQUIPMENT KIT INCLUDES:
 W-1265.....6 COND. CABLE, 30'
 A-1115-0042.....DB9 TO RJ11
 A-1115-0044.....DB25 TO RJ11
 A-1146-0005.....NETWORK/CABLE TESTER
3. USE EITHER THE DB9 OR DB25, DEPENDING ON YOUR PC'S REQUIREMENTS.
4. COMPUTER MUST HAVE AN OPEN SERIAL PORT.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: INFONET SINGLE LINE W/MDC	
TITLE: V1500 SYSTEM RISER DIAGRAM; RS/232	
DES. BY: JCOOK	DATE: 17APR97
DRAWN BY: AMEYER	
REVISION	APPR. BY:
SCALE: 1=2	
1165-R01A-92268	

REV.	DATE	DESCRIPTION	BY	APPR.



NOTES:

1. MANY DIFFERENT DISPLAY SIZES OR TECHNOLOGIES MAY BE USED WITH IN NETWORK.
2. RS/422 CONTROL EQUIPMENT KIT INCLUDES:
 W-1363.....SERIAL CABLE
 A-1127-0255.....SIGNAL CONVERTER
 A-1146-0005.....NETWORK/CABLE TESTER
3. USE EITHER THE DB9 OR DB25, DEPENDING ON YOUR PC'S REQUIREMENTS.
4. COMPUTER MUST HAVE AN OPEN SERIAL PORT.
5. RS/422 CABLE IS 6-COND, 26GA, STRANDED TERMINATED ON BOTH ENDS WITH RJ-14 JACKS (FLIPPED).

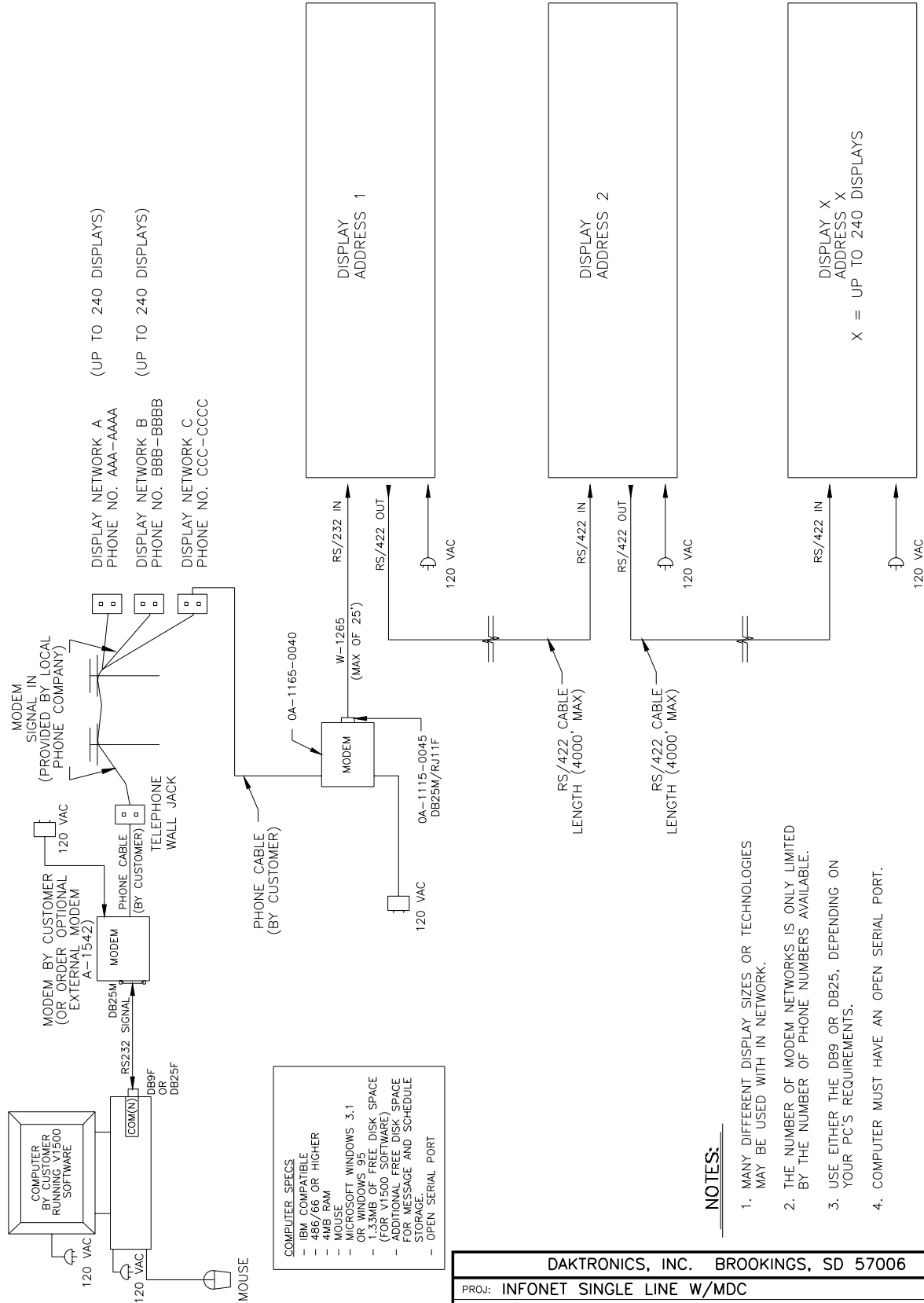
REV.	DATE	DESCRIPTION	BY	APPR.
3	25 MAR 04	REPLACED A-1127-0237 WITH A-1127-0255 (INCLUDES SURGE PROTECTION) CHANGED COMPUTER SPECS	SAI	DJM
2	27AUG98	ADDED SPEC NOTE 5 ABOUT RS/422 CABLE	MJS	
1	8 JUL 97	ADDED NOTE FROM SIGNAL CONVERTOR FOR OPTIONAL NETWORK.	MER	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: INFONET SINGLE LINE W/MDC
 TITLE: V1500 SYSTEM RISER DIAGRAM; RS/422
 DES. BY: JCOOK DRAWN BY: AMEYER DATE: 17APR97

REVISION	APPR. BY:	1165-R01A-92267
03	SCALE: 1=2	



DISPLAY NETWORK A (UP TO 240 DISPLAYS)
PHONE NO. AAA-AAAA

DISPLAY NETWORK B (UP TO 240 DISPLAYS)
PHONE NO. BBB-BBBB

DISPLAY NETWORK C
PHONE NO. CCC-CCCC

COMPUTER SPECS

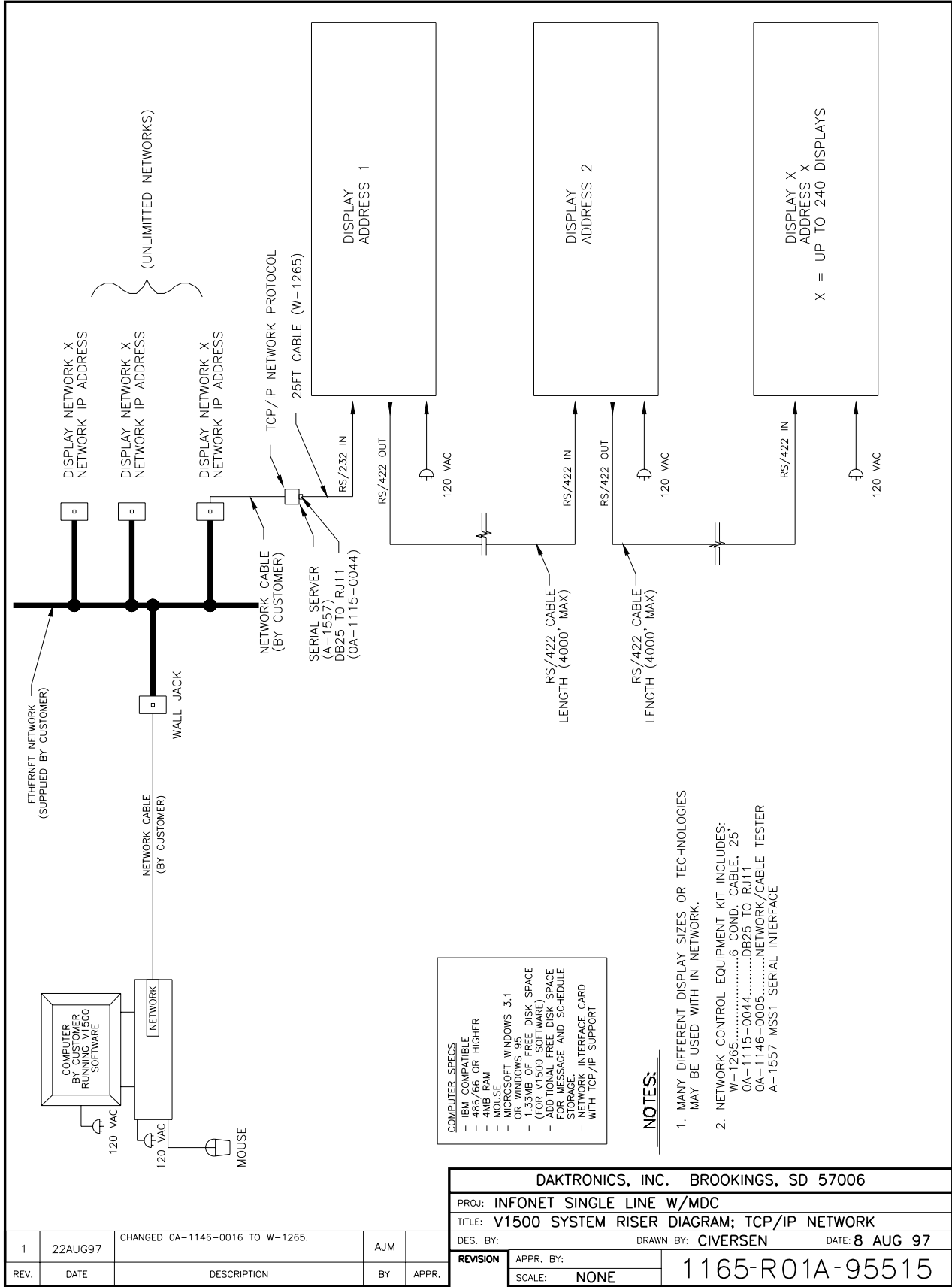
- IBM COMPATIBLE
- 16MB OR HIGHER
- 4MB RAM
- MOUSE
- MICROSOFT WINDOWS 3.1 OR WINDOWS 95
- 1.33MB OF FREE DISK SPACE (FOR V1500 SOFTWARE)
- ADDITIONAL FREE DISK SPACE FOR MESSAGE AND SCHEDULE STORAGE.
- OPEN SERIAL PORT

NOTES:

1. MANY DIFFERENT DISPLAY SIZES OR TECHNOLOGIES MAY BE USED WITH IN NETWORK.
2. THE NUMBER OF MODEM NETWORKS IS ONLY LIMITED BY THE NUMBER OF PHONE NUMBERS AVAILABLE.
3. USE EITHER THE DB9 OR DB25, DEPENDING ON YOUR PC'S REQUIREMENTS.
4. COMPUTER MUST HAVE AN OPEN SERIAL PORT.

1	1 MAY 97	CHANGED MODEM AT SIGN TO FROM A-1542 TO 0A-1165-0040. REMOVED GENDER CHANER FROM MODEM	CI	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: INFONET SINGLE LINE W/MDC			
TITLE: V1500 SYSTEM RISER DIAGRAM; MODEM			
DES. BY: RKOERNER	DRAWN BY: AMEYER	DATE: 25APR97	
REVISION	APPR. BY:	1165-R01A-92570	
	SCALE: 1=2		



COMPUTER SPECS

- IBM COMPATIBLE
- 486/66 OR HIGHER
- 4MB RAM
- MOUSE
- MICROSOFT WINDOWS 3.1 OR WINDOWS 95
- 1.5MB 5.25 FLOPPY DISK SPACE
- (3.5MB 5.25 FLOPPY)
- ADDITIONAL FREE DISK SPACE FOR MESSAGE AND SCHEDULE STORAGE.
- NETWORK INTERFACE CARD WITH TCP/IP SUPPORT

NOTES:

1. MANY DIFFERENT DISPLAY SIZES OR TECHNOLOGIES MAY BE USED WITH IN NETWORK.
2. NETWORK CONTROL EQUIPMENT KIT INCLUDES:
 W-1265.....6 COND. CABLE, 25
 0A-1115-0044.....DB25 TO RJ11
 0A-1146-0005.....NETWORK/CABLE TESTER
 A-1557 MSS1 SERIAL INTERFACE

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: INFONET SINGLE LINE W/MDC	
TITLE: V1500 SYSTEM RISER DIAGRAM; TCP/IP NETWORK	
DES. BY:	DRAWN BY: CIVERSEN
DATE: 8 AUG 97	
REVISION	APPR. BY:
SCALE: NONE	1165-R01A-95515

1	22AUG97	CHANGED 0A-1146-0016 TO W-1265.	AJM	
REV.	DATE	DESCRIPTION	BY	APPR.

Section 2: Mechanical Installation

Note: Daktronics engineering staff must approve *any* changes made to 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.

2.1 Support Structure Design

Support structure design depends on mounting methods, display size and weight. The structure design is critical and should be done only by a qualified individual. It is the customer's responsibility to ensure that the structure and mounting hardware is adequate. *Daktronics is not responsible for the installations or the structural integrity of support structures done by others.*

2.2 Display Ventilation Requirements

Fresh air inlets and exhaust vents should not be obstructed in any way. Using the Daktronics suggested mounting methods will ensure proper ventilation. Consult a Daktronics sales representative for clearance requirements regarding your particular display if you are using a different mounting method. If ventilation requirements are not met, the display warranty will be void.

2.3 Display Mounting

It is the customer's responsibility to ensure that the installation will meet local standards. The mounting hardware must be capable of supporting all components to be mounted. The mounting hardware and method are the responsibility of the customer. *Daktronics is not responsible for the installations or the structural integrity of support structures done by others.*

Daktronics has recommendations for both a wall mount method and a hanging mount method. Remember to have *all* mounted displays inspected by a qualified structural engineer.

Wall Mount

Reference Drawings:

Shop Drawing, G-***-1-7x***-2.1.....**Drawing A-86943**

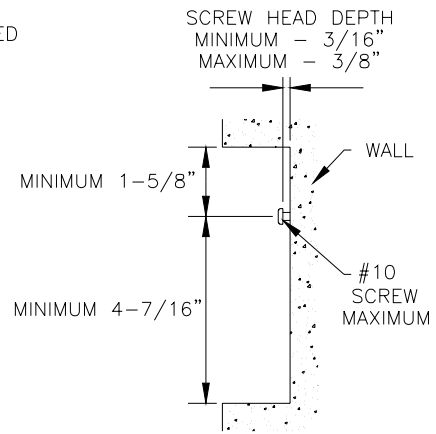
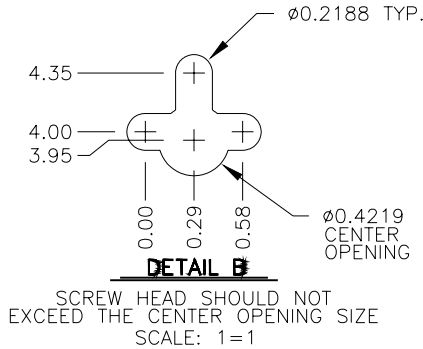
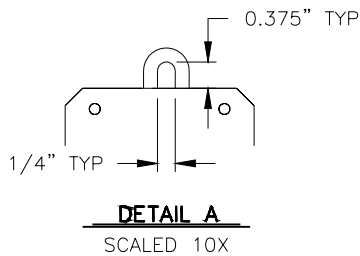
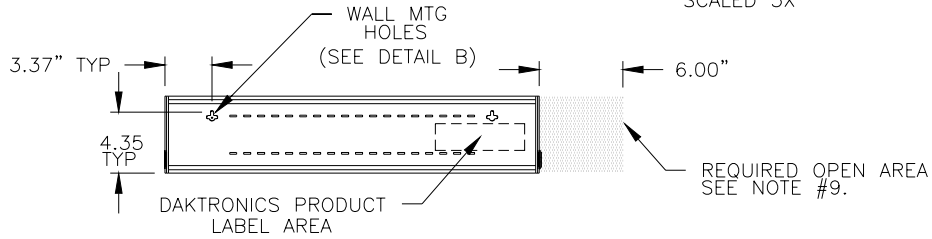
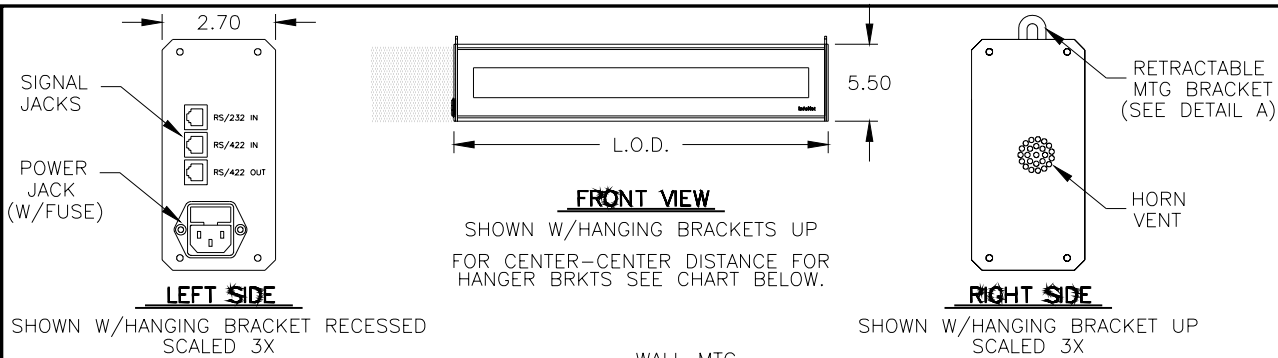
The single line InfoNet has "star" mounting holes on the back of the display for wall mounting (refer to **Drawing A-86943** for dimensions and spacing). Be sure the wall anchors are strong enough to support the display. A bracket may be required to accommodate this. Have *all* mounted displays inspected by a qualified structural engineer.

Hanging Mount

Reference Drawings:

Shop Drawing, G-***-1.7x***-2.1..... **Drawing A-86943**

The single line InfoNet has retractable hanging brackets within the end caps (refer to **Drawing A-86943** for dimensions and spacing). To access the hanging brackets, rotate the display upside down until the brackets extend outward. **Caution:** Be sure the mounting harness (chains, wire, etc.) is directly above the brackets and hanging straight up and down to prevent any side stress to the brackets. Have *all* mounted displays inspected by a qualified structural engineer.



100 / 200 SERIES DISPLAY 120V/240V

MODEL NUMBER	POWER (WATTS)	AMPS (120VAC)	AMPS (240VAC)	L.O.D.	HANGING CENTER-CENTER	WALL MOUNT CENTER-CENTER	DISPLAY WIEGHT
G-***-1-7X80-2.1	49	.40	.20	26.75"	26.38"	20.00"	10 LBS
G-***-1-7X120-2.1	71	.60	.30	38.75"	38.38"	32.00"	12 LBS
G-***-1-7X160-2.1	93	.80	.40	50.75"	50.38"	44.00"	15 LBS
G-***-1-7X200-2.1	115	1.00	.50	62.75"	62.38"	56.00"	18 LBS
G-***-1-7X240-2.1	136	1.10	.60	74.75"	74.38"	68.00"	22 LBS

NOTES

- ALL DIMENSIONS ARE IN INCHES.
- DISPLAY IS OF ALL ALUMINUM CONSTRUCTION.
- DISPLAY IS NOT FIELD SERVICEABLE.
- DISPLAY IS POWDER COAT PAINTED BLACK.
- POWER AND SIGNAL ARE PLUGGED INTO THE LEFT END CAP OF THE DISPLAY.
- ALL MOUNTING HARDWARE NOT PROVIDED BY DAKTRONICS MUST BE APPROVED BY A QUALIFIED ENGINEER.

- ACTIVE DISPLAY AREA = (LENGTH - 2.80") X (HEIGHT - 2.80").
- REFER TO CHART FOR APPROX. POWER DEMAND.
- REQUIRED OPEN AREA IS RESERVED FOR ACCESS TO THE POWER JACK AND SIGNAL JACKS. THIS END CAN NOT BE FLUSH AGAINST ANY OBSTRUCTION.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	INFONET SINGLE LINE W/MDC
TITLE:	SHOP DWG, G-***-1-7X***-2.1 120V/240V DISPLAYS
DES. BY:	DRAWN BY: JOSBAH DATE: 04FEB97
REVISION	APPR. BY:
SCALE: 1:12	1165-E10A-86943

REV.	DATE	DESCRIPTION	BY	APPR.
1	4MAY98	CHANGED MOUNTING SCREW INFO TO #10 HARDWARE AND UPDATED MTG SLOT.	WRT	

Section 3: Electrical Installation

3.1 Power

Power Requirements

Refer to the specifications sheet (SL-3446) for voltage and current requirements. The displays are sufficiently powered by a 120VAC single phase outlet in North America and by a 240VAC single phase outlet in International (CE Approved) use.

Do not connect the display to any voltage other than that listed on the Daktronics product label attached to the back of the display.

Grounding

Proper grounding is necessary for reliable equipment operation and provides some protection to the equipment from damaging electrical disturbances. The displays are supplied with a power cord which contains an earth ground conductor. Make sure to plug this cord into a grounded outlet. If the proper grounding methods are not followed, the warranty will be void. **Note:** Displays must be earth grounded according to local electrical code.

Power Connection

The single line InfoNet displays are supplied with a six (6) foot power cord appropriate for the region where the display will be used.

The socket-outlet should be installed near the equipment and should be easily accessible. Plug the power cord into the receptacle on the side of the display and into the socket-outlet.

3.2 Signal

KNote: CE Approved displays (240 VAC only) must use shielded cables to remain CE compliant.

Cables

The six conductor connector used in the network is an industry standard, RJ-11. This connector can be found on many telephones.

The cable used in the network is a standard flat six conductor telephone cable (**standard flipped cable**). Refer to **Figure 1**. This cable has one end that is the mirror image of the other end (i.e. the cable is flipped). Refer to **Figure 2** for a standard flipped cable. Notice in **Figure 2** that the color code on one connector must be made the opposite on the other connector. When installing a network, it is not easy to remember in which direction the previous end was oriented. One simple way to avoid confusion is to standardize the color code

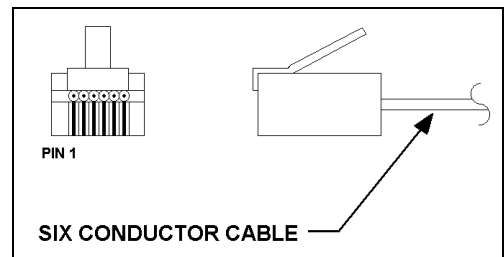


Figure 1: Six Conductor RJ11 Connector and Cable

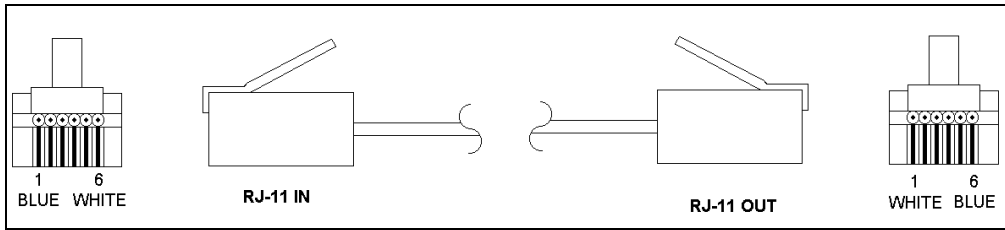


Figure 2: Flipped Cable with RJ11 Connectors

as one color for the connector going into the output of a sign, and the opposite color for a connector going into the input of a sign. This will help ensure correct cabling, since cables are always installed from the output jack of one sign to the input jack of the next sign.

Installing an RJ11 Connector

Installing an RJ11 connector on the end of the six conductor cable is a simple task when the correct tools are used. The RJ11 crimping tool (Daktronics part number TH-1033) performs two separate steps.

1. Use the crimping tool to strip the outer insulation from the inner wires. This does not result in bare wires since only the gray outer jacket is removed. After correct stripping, the wire will appear as shown in **Figure 3**.
2. The crimping tool is used to crimp the RJ11 connector onto the cable.
 - a) The RJ11 connector is locked into a special socket in the tool.
 - b) Then the stripped wire is inserted into the RJ11 connector.
 - c) Finally, the tool is squeezed like a pliers to crimp the connector onto the cable.

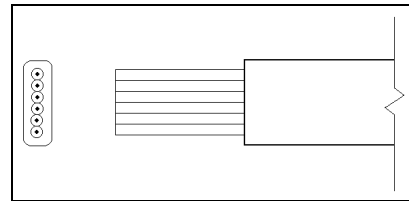


Figure 3: Wire with Outer Jacket Stripped

This completes the installation of an RJ11 connector onto the cable.

3.3 Computer to Sign

RS/232 System

Reference Drawings:

Shop Drawing, G-***-1-7x **Drawing A-86943**
 System Riser; RS232..... **Drawing A-92268**

A RS/232 system connects the first sign directly to the computer. The adapter cable comes with both a 9 pin and a 25 pin connector.

1. Plug either the 9 pin or 25 pin connector (depending your personal computer) to the RS/232 serial COM port on the back of the computer.
2. Plug one end of the phone cable into the adapter.
3. Plug the opposite end into the “RS/232 IN” jack on the display as shown in **Drawing A-86943, Left Side**.

RS/422 System

Reference Drawings:

Shop Drawing, G-***-1-7x.....	Drawing A-86943
System Riser; RS422.....	Drawing A-92267

A RS/422 system requires a signal converter to connect the first sign to the computer.

1. Plug the serial cable's 25 pin connector into the signal converter.
2. Plug either the 9 pin or the 25 pin connector (depending on your personal computer) into the RS/232 COM port on the back of the computer.
3. Plug the signal converter's power cord into a 120VAC grounded outlet.
4. Finally, plug a flipped phone cable into the "RS/422 OUT" of the signal converter and the opposite end into the "RS/422 IN" of the first display of the system.

Modem System

Reference Drawings:

System Riser Diagram; Modem	Drawing A-92570
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A modem system uses an external modem and a standard phone line to connect the computer to the sign. At the display, simply plug into a phone cable from the J-box into the jack labeled "PHONE IN." Refer to the modem's manual for information on connection the modem to the computer.

TCP/IP or LAN System

Reference Drawings:

System Riser Diagram; TCP/IP	Drawing A-95515
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A LAN system requires a computer running on a LAN.

1. Connect the serial server to the LAN. The server has an RS/232 output just as a PC would.
2. Follow the steps for the setup of a RS/232 system.

3.4 RS/422 Sign to Sign Connections

Reference Drawings:

System Riser; RS232.....	Drawing A-92268
System Riser; RS422.....	Drawing A-92267

┌ The sign to sign connections are the same for a RS/232 system and a RS/422 system.

When wiring a sign to sign network, the cable and connectors discussed earlier in this section are used. Pay special attention to the information regarding flipped cables to help ensure a successful installation. The best method of wiring the signs together is to start at the first sign, since it is designated to begin the network.

Plug the cable into the "RS/422 OUT" output jack of the first sign and the other end of the cable into the "RS4/22 IN" input jack of the next sign. Continue this procedure throughout the network. When the wiring is complete, the last sign will have nothing in the output jack.

Section 4: Maintenance & Troubleshooting



IMPORTANT NOTE:

This unit is *not* a field serviceable unit. Contact Daktronics customer service for repair options. Failure to do so will void the warranty.

4.1 Troubleshooting

This section contains some symptoms that may be encountered with the LED displays. Possible remedies are provided. This list does not include every possible problem, but does represent some of the more common situations that may occur.

Symptoms/Conditions	Possible Cause/Remedy
Cannot communicate with the display.	<ul style="list-style-type: none">• Check flipped phone cable connections• Check display configuration• Check Venus 1500 configuration• Check signal converter power and TX LED's.• Contact Daktronics customer service
Display will not run.	<ul style="list-style-type: none">• Check power cord• Check the fuse• Power down then power up the display (reset)• Contact Daktronics customer service
Entire display is garbled or a section of the display is bad.	<ul style="list-style-type: none">• Power down, then power up display (reset)• Contact Daktronics customer service
Section of the network of displays is not working.	<ul style="list-style-type: none">• Bad input on first bad display• Bad output on last good display• Switch the suspected bad display with a known good display• Contact Daktronics customer service.

Note: The display configuration will be shown on power up and will contain the following information:

1. Output Test (DDD=)
2. Display Model Number (i.e. G-100-1-7x120)
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--displayed in binary code (i.e. 001)
8. Sign Name

4.2 Replacement Parts

Part Description	Daktronics Part No
Power Cord (North America)	W-1181
Signal Converter	0A-1127-0237
Signal Converter Serial Cable	W-1363
25 Foot RJ11 Cable	W-1265
100 Foot RJ11 Cable	0A-1146-0002
500 Foot RJ11 Cable	0A-1146-0003
1000 Foot RJ11 Cable	0A-1146-0004
Six Conductor Wire	W-1368
Crimp Tool	TH-1033
RJ11 Connector	P-1211
Venus 1500 Manual	ED-12717
Cable Tester	0A-1146-0005
PC DB9-RJ11	0A-1115-0042
PC DB25-RJ11	0A-1115-0044
Modem (Sign)	0A-1165-0040
Modem (Computer)	A-1542
Serial Server	A-1557
30' Cable	0A-1146-0016
Patch Cable, 10'	W-1383

4.3 Repair and Return Procedure

1. **Packaging for Return:** Package and pad the item well so that it will not be damaged in shipment.

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

2. **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.

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