VENUS® 1000
PROGRAMMER'S CONSOLE

INSTALLATION & OPERATION MANUAL

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TABLE OF CONTENTS

SECTION 1: INTRODUCTION

This manual is designed to explain the installation and operation of the Daktronics Venus® 1000 programmer's console.

Certain displays have a Venus 1000 controller built into the display cabinet. The Venus 1000 is a computer (without a monitor or keyboard) in a box that is connected to the drivers in the display. All information stored by the Venus 1000 is stored in a battery backed up memory to ensure normal display operation after a power failure. The Venus 1000 can store up to 32 different messages. Each message has a limit of 32 frames. There is a total of 850 frames. Information is sent to the Venus 1000 via a dial-up phone line or a leased-line (direct wire).

The Venus 1000 Programmer's Console is used to create and send messages to the Venus 1000 controller. It is also used to tell the Venus 1000 which messages to run and other control information (such as dimming). The programmer's console is not a specific piece of hardware but is actually a software package that can be run on almost any IBM or IBM compatible computer.

The minimum requirements for the computer are:

- ✔ IBM or compatible
- ✔ 640K RAM
- ✔ CGA monitor (or better)
- ✔ Standard serial COM port
- ✔ 3.5" (720K) diskette drive (5.25" diskettes are special order)
- ✔ DOS Version 3.3 or later
- ✔ 8088/8086 microprocessor or compatible (286 microprocessor or higher is preferred)

The programmer's console also requires a modem to communicate over the phone line. A modem for the programmers console is provided with the system. It is Hayes compatible and runs at 2400 baud.

The Venus 1000 programmer's console communicates with the Venus 1000 controller only when changes are being made. When the programmer's console computer is not being used to program the Venus 1000 controller, it can be used to run other software. Therefore, an existing computer can be used or you can purchase your own computer for the system. Daktronics can also provide a computer with the system as an option.

SECTION 2: INSTALLATION

2.1 Programmer's Console Installation

It is only necessary to run the Venus 1000 programmer's console software on the computer when changing messages and sending new information to the display. When the programmer's console computer is not being used for Venus 1000 operations, it can be sued to run other software. An existing computer can be used or you can purchase your own computer for the system. A computer can be provided with the system, but it does not come standard and must be ordered as an option. This means that the installation procedure will be slightly different depending on what computer is used.

2.1.1 Unpacking And Inspecting

If using a new computer, unpack it and inspect it for any damage. If damage has occurred, file a claim immediately to ensure credit. Check for any missing components. Connect all the components according to the instructions given with the computer. Do not install any software until the next two section have been read.

Unpack the contents of the users kit box of which this manual is a part of. It should also contain the Venus 1000 programmer's console diskettes (3.5"), a 2400 baud modem, computer modem cables and a telephone terminal block.

2.1.2 Placement Requirements and Connections

The computer should be placed where the temperature is between 45 and 90 degrees Fahrenheit. The humidity should be non-condensing and between eight and 80 percent.

The modem needs to be within a few feet of the computer. The modem power supply and telephone cable are provided with the modem.

Connect as follows:

1. Connect the modem to its power supply and plug the supply into 120VAC.
2. Connect the computer to power.
3. Connect the computer to the modem using the cable provided in the users kit.
4. Connect the modem to the incoming line (telephone or leased line):
   a. **Telephone line connection:**
      1. Plug one end of telephone cable into the jack in the back of the modem labeled "LINE."
      2. Plug the other end of the telephone cable into the telephone terminal block of a touch tone telephone line (dial-up).
   b. **Leased line (direct wire) connection:**
      1. Locate and mount the telephone terminal block from the user's kit.
      2. Connect the communication cable from the display to the **RED** and **GREEN** wires in the terminal block.
      3. Plug one end of the telephone able into this terminal block.
      4. Plug the other end of the telephone cable into the jack in the back of the modem labeled "LINE."
5. Turn the modem and the computer on.

2.1.3 Installing The Software

Note: If you have purchased a computer from Daktronics for the Venus 1000 programmer's console, all necessary system software will already be installed on the hard drive of the computer. Proceed to **Section 3: Programmer's Console Operation.**

If the computer does not already have DOS on it, install DOS first according to the instructions given with the computer (preferably DOS version 5.0 or later). To install the Venus 1000 programmer's console software onto the hard drive, place one of the Venus 1000 diskettes into drive A of the computer. From the DOS prompt, type A:/INSTALL and press **[ENTER]**.

The following directories and files will be installed on the hard drive (drive C):

1. Creates directories \V1000, \V1000\FONT, \V1000\MSG
2. Copies the Venus 1000 program (V1.EXE) to the directory \V1000.
3. Copies the font files (_____.FNT) to the directory \V1000\FONT.
4. Copies the sample messages (_____.MSG) to the directory \V1000\MSG.
5. Creates a start up batch file (V1.BAT) in the ROOT directory.

After all the files are copied, remove the diskette from drive A: and store it in a dry and cool place for backup.

If the computer does not have a hard drive, place a DOS bootable diskette in drive A and boot up on it. Then either remove the DOS diskette and place a Venus 1000 diskette in drive A; or leave the DOS diskette and place a Venus 1000 diskette in drive B, type in B: and press **[ENTER]**. When the computer is sitting at the DOS prompt of the drive that contains the Venus 1000 software (A:\, B:\ or C:|), you are ready to move onto the operation section.

If installing from a drive other than drive A and/or to a drive other than drive C, type in the following at the DOS prompt: [source drive letter]\:INST [source drive letter] [destination drive letter]. For example if installing from drive B to drive D, type B:\INSTB D

2.2 First Time Turn On

The programmer's console is not installed. When the display with the Venus 1000 is installed and successfully powered up, move on to **Section 3: Programmer's Console Operation**.

SECTION 3: PROGRAMMER'S CONSOLE OPERATION

3.1 Starting Up The Programmer's Console

Make sure the software has been installed as described in **Section 2**. If your computer does not have a hard drive, begin by booting up on a DOS diskette and then insert the Venus 1000 diskette into a drive and change to the drive "[drive letter]: [ENTER]." If the computer has a hard drive, just turn the computer on.

Start the program by typing V1 at the DOS prompt and then pressing [ENTER]. Allow time for the program to load and the menu screen to come up.

The top of the screen will show the following information:

Venus 1000 Programmer's Console (Software version) Copyright Daktronics, Inc. 1994 (Time/Date)

The first time the program is run after installation, there is no configuration file. The programmer's console needs to be configured for proper operation. Select the pixel height and display technology of the sign from the menu that appears. After the program has been configured, the *Main Menu* will appear whenever the program is started.

The *Main Menu* will appear directly below the screen header. It has the following items:

Sign	F1
Edit Message	F2
Edit Schedule	F3
Configure	F4
Exit to DOS	F10

There are several ways to select items from the *Main Menu* or any other menu. The item can be selected by pressing the function key [F#] listed beside the item or by using the arrow keys to move the highlight bar to the item and then pressing [ENTER]. Each item has one letter that is a different color (on an LCD, the letter will have a thinner stroke). The item can also be selected by pressing that letter. Pressing the letter once will move the highlight bar to the item and pressing it a second time will select the item.

In most cases, [ESC] and [F10] will exit the current menu and go back to the previous menu. At the *Main Menu* these keys will exit the program and return to DOS.

If the computer has a mouse, it can also be used. Moving the mouse cursor to an item will move the highlight bar. The left mouse button acts like the [ENTER] key. The right mouse button acts like the [ESC] key.

3.2 Configuration

Before connecting to the Venus 1000 in the display for the first time, all items of the programmer's console configuration should be checked and adjusted if needed. Once the configuration is set for the system, it only needs to be adjusted if something about the system changes. To set the configuration, selected **Configure - F4** from the *Main Menu*, then select **Set Configuration - F1**. This will bring up the *Configuration Menu*.

The *Configuration Menu* has these items:

Line Length	F1
Line Height/Type	F2
Sign Type	F3
Connection Type	F4
Serial Port	F5
Baud Rate	F6
Message Drive	F7
Monitor Type	F8
Exit	F10

For first time configuration, go through and select each item from this menu and set it up according to the system. When selecting items from this menu, it is not replaced by another menu. This menu remains and another menu appears that gives a list of settings to select from. The currently selected setting from that menu will have a check mark by it. When one settings menu is being shown, a different one can be selected from the *Configuration Menu* by using the function keys. Each settings menu can be closed by using [ESC] or the next configuration item can be moved to by selecting it with the function keys.

3.2.1 Line Length - F1

Press [F1] from the *Configuration Menu* to make the *Line Length Settings Menu* appear. The line length is the number of columns in one line of the sign. Select the appropriate line length for the sign by moving the highlight bar and press [ENTER] to check mark it. Simply moving the highlight bar will not select an item; be sure the item has the check mark by it.

3.2.2 Line Height/Type - F2

Press [F2] from the *Configuration Menu* to make the *Line Height/Type Settings Menu* appears. This item allows the pixel height to be changed between seven pixels and eight pixels high and the type to be changed between incandescent or Glow Cube®. For a 6-high Glow Cube display, this item will be the "Number of Lines" on one face of the sign.

3.2.3 Sign Type - F3

The **Sign Type** describes the number of faces of the sign. For Glow Cube displays, select either "Double Faced" or "Independent Control" if the sign has two faces.

Independent Control will run one set of messages on the master face and a completely different set of messages on the slave face. A name for each face can be entered to customize how each face is identified. Select "Face 1" or "Face 2" and type in the name for that face.

Note: The Independent Control option provides great flexibility. It allows two different audiences to be addressed from one location. For example, if the

sign is on the edge of town, one set of messages could be run for people coming into town and a different set of messages for people leaving town.

3.2.4 Connection Type - F4

The **Connection Type** is how the programmer's console sends information to the Venus 1000 in the sign. The options for sending information are: Dial-up Modem, Leased Line Modem (direct wire) or Direct (RS232). Dial-up requires a standard phone line; Leased line can run up to 2000 feet with proper wire selection; Direct (RS232) can only run about 25 feet but is usually used with a radio.

Select the connection type the system has. If the system has a dial-up modem connection, enter the phone number of the phone line connected to the Venus 1000 in the sign. Enter in how long (in seconds) to wait for the Venus 1000 to answer before hanging up. This will depend on how long it takes the phone system to get the first ring through to the sign. The ring heard on the calling end is not the ring on the other end. It may take 60 seconds or more before the sign gets its first ring.

3.2.5 Serial Port - F5

The **Serial Port** is the communication port on the computer that the modem or radio is connected to. Usually, this port will be com1. Consult the computer manual if unsure.

3.2.6 Baud Rate - F6

The **Baud Rate** is the speed of the communication link. The maximum rate for the modem is 2400 baud (default). Changing the baud rate requires changing it both at the programmer's console and at the sign. Radio connections usually run at 9600 baud.

3.2.7 Message Drive - F7

The **Message Drive** is the drive on the computer where messages will be stored. Drive A and Drive B are floppy drives and Drive C is a hard drive. The default drive is the drive that the programmer's console is being run from. **Default Drive** should normally be selected. An exception may be if the software is being run from the hard drive but the messages are to be stored on floppy drive so the messages can be transported to another computer. Messages are stores in the directory \MSG on floppy drives or \V1000\MSG on a hard drive.

3.2.8 Monitor Type - F8

If a color monitor is connected to the computer, select Color Monitor. Otherwise, select B/W or LCD monitor.

3.2.9 View Configuration

To view the current configuration, select **Configure - F4** from the *Main Menu* then **View Configuration - F2**. This will show the current selection of all the configuration items.

3.2.10 Password Protection

The programmer's console can be configured to used a password that restricts access to the program. When the software is first installed, the password protection is turned OFF and the default password is "PASSWORD." The current password is required to turn protection ON or OFF and to change the password. If password protection is ON, the password will need to be entered in when starting up the programmer's console. Be careful not forget the new password!

Password Control is found in the *Configure Menu* ([F4] from the *Main Menu*). To turn protection ON or OFF, select **Password On/Off - F3** and enter in the password to change the setting. A check mark beside this item indicates protection is ON. Select **Change Password - F4** to change the password. Enter in the current password then enter the new password twice to ensure against accidental wrong keystrokes. Changing the password does not turn protection ON!

3.3 Quick Start

Now that the programmer's console is properly configured, you are ready to connect to the Venus 1000. This section shows how to change the messages running on the sign by selecting from the messages that are already stored at the Venus 1000. The minimum number of steps are given to get the first message running on the sign.

3.3.1 Connecting To The Sign

In order to change the messages running on the sign, the programmer's console must first *connect* with the Venus 1000 in the sign. This does not mean a physical connection The physical connection is needed, but in this case, *connect* means to establish a communication link between the programmer's console and the Venus 1000.

Connection steps:

1. The programmer's console calls the Venus 1000 (each has a modem).
2. The modems establish a link.
3. The programmer's console and Venus 1000 begin to exchange information.

From the *Main Menu*, select **Sign - F1**. From the *Sign Menu*, select **Connect - F1**. The programmer's console modem will pick up the phone line and dial the phone number configured for the modem at the sign. You will be able to hear the modems *connect*. The communication status is displayed on the bottom line of the monitor. For more information, refer to **Section 3.6.1**.

When the link is established, the *Sign Menu* will change to:

Message	F1
Bright/Dim	F2
Get Status	F3
Get Directory	F4
Set Time/Date	F5
Temp Offset	F6
Disconnect	F9
Exit	F10

For Glow Cube line display, **Bright/Dim** is replaced by **Front Lighting**. Also, if **Independent Control** is configured, a face will need to be selected after selecting **Message** from this menu.

3.3.2 Starting Messages

Sample messages are stored in the battery backed memory. Some or all of these messages will be running on the sign. The following information explains how to start a different set of messages running.

Select **Message - F1** to get the *Message Menu*:

Start/Stop Message	F1
Run Schedule	F2
Stop Sign	F3
Get Schedule	F4
Send Schedule	F5
Delete Message	F6
Edit Message	F7
Edit Schedule	F8
Test Sign	F9
Exit	F10

Select **Start/Stop Message - F1**. A message will appear on the programmer's console screen that says "Getting Directory" which means that it is getting a list of all the messages stored in memory at the Venus 1000. Then a message will appear that says "Getting List of Messages Running." Once the programmer's console has received these lists, it will show a list of all messages stored at the Venus 1000 with check marks beside the ones that are currently running on the sign.

Move the highlight bar to a message and mark it or unmark it by pressing [ENTER]. When the desired messages have been marked, press [F10] or move the highlight bar to **Run** at the bottom of the list and press [ENTER]. This will run the new set of messages just marked. The programmer's console screen will tell which messages are being started or stopped. If the messages running should not be changed, do not select **Run** or press [F10]. Press [ESC] to exit this menu.

3.3.3 Creating A New Message

Edit Message can be selected from the *Message Menu* or from the *Main Menu.* Select **Edit Message** once and the *Edit Message Menu* will appear. Select **Edit Message - F1** again and a list of messages stored on the programmer's console drive will appear. Create a new message by selecting **New**. Enter the new name (up to eight characters long). It can be any combination of letters and numbers, but cannot include any blanks or periods. Type in the new name and press [ENTER].

The Message Editor screen will appear showing the *Help Menu*, edit window and frame verifier. The cursor will be flashing in the edit windows which will be showing frame #1. Type in the text for this frame (it is best to use all capital letters). The verifier will show how the text will appear on the sign. This allows you to see immediately how the text will look on the sign.

Press [F5] to add a second frame. Follow this procedure to produce a three or four frame message. Use [F11] and [F12] to step through the frames. Use **Preview - F7** to see what the message will look like. Strike any key to end the preview. To save the message, press [F9] as shown in the *Help Menu.* Press [ESC] three times to get back to the *Message Menu* (or the *Main Menu*).

Chen a message is created or edited on the programmer's console, it is stored on the drive of the computer. This has NO effect on what is running on the sign or what is

stored in the memory of the Venus 1000 in the sign. To make use of new or changed messages, they need to be sent to the Venus 1000 in the sign.

To send the message to the sign, make sure you are connected to the Venus 1000 and select **Send Message - F5** from the *Message Menu.* A list of messages stored on the programmer's console message drive will appear. Select the message just created and press [F10] or move the highlight bard to **Send** and press [ENTER]. Now run the message by following the procedure in **Section 3.3.2.**

3.4 Edit Message

To edit messages stored on the programmer's console disk drive, select **Edit Message** from the *Main Menu.* The *Edit Message Menu* will appear:

Edit Message	F1
Delete Message	F2
Preview	F3
Exit	F10

3.4.1 Edit Message

Press [F1] to enter the Message Editor. This gives a list of messages on the programmer's console disk drive. To edit an existing message, highlight the message name and press [ENTER]. Small arrows just to the left and top and/or bottom of the list of message names will indicate if there are more message names that cannot be shown in the list at one time. Move the highlight bar in the direction of the arrow to see more message name.

Once a message has been selected for editing, the Message Editor screen will appear. This screen has a menu, an edit window and a frame verifier.

The menu has the following items:

F1 Font	F5 Add Next Frame	F9	Save
F2 Justification	F6 Delete Frame	F10	Exit (Esc)
F3 Time/Date/Temp	F7 Preview	F11	Previous Frame (PgUp)
F4 Frame Parameters	F8 Save As	F12	Next Frame (PgDn)

The Edit Window shows the following:

1. The name of the message being edited.
2. The current frame number and the total number of frames in the message.
3. Justification
4. Text and special control characters for the frame.
5. Hold time
6. The entry effect and rate (not available for Glow Cube line displays)

Start typing to enter text. The verifier shows how the text will appear on the sign as each character is typed. The editor will not allow more text than will fit the sign and will beep if too many characters are entered.

If you want to create a new message, select **New** (at the top of the list). A box will appear to enter the new name. The name can be up to eight characters long. It can be any combination of letters and numbers but cannot include any blanks or periods. Type in the new name and press [ENTER].

Selecting / Adding / Deleting Frames

Press [F11] or [F12] to select or review the frames in the message. The [PGUP] and [PGDN] keys will also perform this function. Press [F5] to add a new frame immediately after the currently selected frame. Press [F6] to delete the current frame.

Font Select

The Venus 1000 comes with two standard character fonts (narrow or wide stroke), one standard graphics font and can have one custom font (contact Daktronics animation department for quotes on custom fonts). A new frame/line will default to the narrow font. To select a different font, press [F1]. A menu will appear listing the font choices. Select a font. A font-selection code (W for wide font, N for narrow font, G for graphic font or C for custom font) will be inserted at the current cursor location. All following characters in the frame will be of the font type selected.

The standard graphics font contains 94 graphic characters. Each graphic character is assigned to a keystroke. A chart is located in **Appendix A** which shows all 7-high graphic characters and their assigned keystrokes. To generate a graphic character, select the graphic font and press the assigned key. For example, to put the graphic character of a car in a frame, select the graphic font and enter a capital C.

Line Justification

The current line justification is indicated by a single letter to the left of the text. The letter can be L (flush-left), C (centered) or R (flush-right). Press [F2] until the desired selection appears to change the justification for the current frame/line.

Time / Date / Temperature

Press [F3] to insert the current time, date or temperature into the message.

Note: the temperature option will not appear unless you have previously connected to the Venus 1000.

A menu will appear with the choices: **Time - F1**, **Date - F2** and **Temperature - F3**. A list of formats will appear when a choice is selected. Select a format and press [ENTER] to insert it into the message at the current cursor location. A representation of the time, date or temperature format selected will appear in the edit window. The actual time, date or 75˚F or 24˚C will appear in the verifier. The date can be put together by selecting different parts and inserting text, comas, etc. (Suggestion: The day of the week is of more interest than the year.)

Frame Parameters (Hold Time for Glow Cube Line Displays)

Press [F4] to edit the hold time or entry effect for the current frame. The default in a new frame will be: hold time - 2 sec, effect-change. A menu will appear with the choices: **Hold Time - F1**, **Entry Effect - F2** and **Effect Rate - F3**. Select [F1] to change the hold time (seconds). Enter the new hold time or press [ENTER] to accept

the current hold time. Press [F2] to change the entry effect. Select the effect and then enter the effect rate when requested. To change the effect rate but not the effect itself, select [F3].

Preview Frame / Message

To get a good idea of what a single frame or message would look like on the sign, use the preview function. Press [F7] and select either **Frame** or **Message**. Press any key to exit the preview.

Saving Messages

Once the message is complete and correct, press [F9] to save it with the current name. The message can also be saved with a different name. Press [F8], enter the new name and press [ENTER].

Press [F10] to exit the message editor. If changes have been made but not saved, a prompt will appear asking it the editor should be exited without saving. Press [Y] to exit without saving the changes. Press [N] to return to the message editor.

3.4.2 Delete Message

To prevent the programmer's console disk drive from filling up, delete any messages that are not needed. To delete a message, select **Delete Message** from the *Edit Message Menu.* A list of messages on the programmer's console will appear. Select the message to delete and press [ENTER]. A prompt will appear to verify the deletion. Press [Y] to complete the deletion or [N] to cancel the action. Press [ESC] to return to the *Main Menu.*

3.4.3 Preview Message

Preview Message shows how the message will appear on the sign. A list of messages will appear. Select the message to preview and press [ENTER]. Press [ESC] to cancel the action. A representation of the sign running the selected message will appear on the screen. Press any key to exit the preview.

3.5 Edit Schedule

The Venus 1000 can store and run only one schedule at a time, but several schedules can be created, edited and stored on the programmer's console disk drive.

Select [F3] and the *Edit Schedule Menu* will appear:

Edit Schedule	F1
Delete Schedule	F2
Exit	F10

3.5.1 Schedule Editor

Press [F1] to enter the Schedule Editor. This gives a list of existing schedules. To edit an existing schedule, highlight the schedule name and press [ENTER]. Small arrows just to the left and top and/or bottom of the list of schedule names will indicate if there are more schedule names that cannot be shown in the list at one time. Move the highlight bar in the direction of the arrow to see more schedule names.

To create a new schedule, select **New** (at the top of the list). A box will appear to enter the new name. The name can be up to eight characters long. It can be any combination of letters and numbers but cannot include any blanks or periods. Type in the new name and press [ENTER].

Once a schedule has been chosen, the Schedule Editor screen will appear. This screen has a menu and an edit window. The edit window shows all 32 possible entries for the schedule being edited. Each entry has four fields: **1)** the name of the message to be run, **2)** the time that the message will start, **3)** the time that the message will start and **4)** which days of the week it will run.

The menu has these items:

F1 Edit (Enter)	F3 Save	F10 Exit (Esc)
F2 Delete (Del)	F4 Save As	

One field of one entry in the schedule will be highlighted. This highlight bar can be moved to other fields and entries using the cursor keys or the mouse. To edit the currently highlighted field, press [ENTER], [F1] or the left mouse button.

If the field selected for editing is the message name, a list of existing messages on the programmer's console disk drive will appear. Select a message from the list or select **New** to type in the name of a message that does not exist on the drive.

To edit the start and stop times, select the appropriate field and press [ENTER]. Type in the desired time, remembering to enter A for A.M. or P for P.M., and press [ENTER]. To run a message all day, enter 12:00 A.M. for both start and stop times.

To edit the days of the week that the message will run, select that field and press [ENTER]. A list of the days of the week will appear, with check marks next to the days that the message will run. Turn the check marks on or off by selecting a day and pressing [ENTER]. **Set All** and **Clear All** can also be selected to set or clear all the check marks. Select **Save - F10** when done. Press [ESC] to abort the action.

Press [F2] to clear the currently selected entry. This clears all four fields of the entry.

Once the schedule is complete and correct, press [F3] to save it with the current name. The schedule can be saved under a new name by pressing [F4], entering the new name and pressing [ENTER].

Press [F10] to exit the schedule editor. If any changes have been made to the schedule and not been saved, a prompt will appear asking if the program should be exited without saving. Press [Y] to exit without saving the changes. Press [N] to return to the Schedule Editor.

If there are any days of the week or times during the day that have no messages scheduled, the sign will go into a shutdown mode (blank the sign; turn off front lighting if applicable).

3.5.2 Delete Schedule

To prevent the programmer's console disk drive from filling up, delete any schedules that are not needed. To delete a schedule, select **Delete Schedule** form the *Edit Schedule Menu.* A list of schedules on the programmer's console drive will appear. Select the schedule to delete and press [ENTER]. A prompt will appear to verify the deletion. Press [Y] to complete the deletion or [N] to abort the process. Press [ESC] to return to the *Edit Schedule Menu.*

3.6 Sign Menu

All control of the Venus 1000 at the sign is done through the *Sign Menu.* One of two menus will appear, depending on whether or not the programmer's console is currently connected to the sign.

If the programmer's console is not connected, this menu will appear:

Connect	F1
Exit	F10

Message	F1
Bright/Dim	F2
Get Status	F3
Get Directory	F4
Set Time	F5
Temp Offset	F6
Disconnect	F9
Exit	F10

If the programmer's console is connected, this menu will appear (F2 is front lighting on Glow Cube line displays):

3.6.1 Connect

If this option is selected, the programmer's console will attempt to connect to the sign. The way the programmer's console connects depends on how it is configured. If the programmer's console is configured for dial-up modem, it will dial the phone number configured of the sign and wait for the modem in the sign to answer. When the modem answers, the Venus 1000 in the sign will exchange some information with the programmer's console to verify that they are connected properly. For leased-line, or direct, the modem does not dial a number, but they still have to connect.

If any part of the configuration stored on the Venus 1000 in the sign does not match the configuration of the programmer's console, this message will appear:

Configuration does not match. Send Configuration? [N] [Y]

If the configuration on the programmer's console is correct, press [Y] to update the configuration at the sign. Otherwise, press [N] to disconnect and check the configuration of the programmer's console.

If a custom font exists, a prompt will appear asking if it should be sent to the Venus 1000. Press [Y] if the custom font will be used.

A message box will pop up on the programmer's console verifying the connection to the sign once communication is established. When the box is cleared, the second *Sign Menu* (connected) will appear.

3.6.2 Message

This option will show the *Message Menu* (a face must first be selected if configured for independent control):

Start/Stop Message	F1
Run Schedule	F2
Stop Sign	F3
Get Schedule	F4
Send Schedule	F5
Delete Message	F6
Edit Message	F7
Edit Schedule	F8
Test Sign	F9
Exit	F10

Start / Stop Message - F1

When this item is selected, a list of message will be shown. Items with check marks are those currently running. Press [ENTER] to toggle the check mark for the currently selected item. Press [F10] or select **Run** (at the bottom of the list) and press [ENTER] to run any messages that are currently checked and stop any messages that are not checked.

Start / Stop Message cannot be selected when a schedule is running at the sign. The sign must first be stopped.

Run Schedule - F2

When this item is selected, a list of schedules on the programmer's console will appear. Select a schedule and press [ENTER]. If a schedule or message is currently running, a prompt will appear asking if the new schedule should be sent. Press [N] to return to the *Message Menu* with no changes to the sign. Press [Y] to stop the sign, send the new schedule and start it running. Only one schedule can be stored and run at the sign at a time.

When sending a new schedule, the programmer's console will verify that all messages in the schedule are already stored in memory at the sign. It will indicate any messages that cannot be found. If any messages are missing, it will ask if the schedule should still be sent. These messages can be sent later. The new schedule will be started as soon as it is sent to the sign. Entries with missing messages are ignored.

Stop Sign - F3

This will stop any messages or schedule running on the sign. A prompt will appear verifying that the sign should be stopped. Press [Y] to stop the sign or [N] to allow it to continue to run.

Get Schedule - F4

This item cannot be selected unless a schedule is currently running at the sign. It will show the current schedule, as well as indicating the current status of each schedule entry. Messages that are running will have a * next to the entry. If a message should be running, but cannot be found in the memory at the sign, it will be marked with a ?.

Send Message - F5

This option allows messages to be sent from the programmer's console to the sign. A list of messages on the programmer's console disk drive will appear. Mark the messages to be sent to the sign by selecting the message and pressing [ENTER]. A check mark will appear next to the selected messages. When all the desired messages have been marked, press [F10] or select **Send** (at the end of the list) and press [ENTER] to send the marked messages.

If a message with the same name is already stored at the sign, a prompt will appear asking if it should be replaced. If the message is also currently running, another prompt will appear about replacing it. This ensures that only what you want changed is changed. This also makes it easy to make changes to a message that is running and send it without stopping the sign.

Delete Message - F6

Messages that are not currently being used can be deleted from the sign memory to free up space for other messages. Deleting a message from the sign does not delete it from the programmer's console disk drive, so the message can be sent to the sign again at some later time (or a different message with the same name).

To delete messages from the sign, select **Delete Message** from the *Message Menu.* A list of messages at the sign will appear. Mark the message to be deleted, select **Delete** (at the end of the list) and press [ENTER] or [F10] to delete the messages.

Messages that are currently running or are included in the current schedule cannot be deleted. Stop the message or schedule before deleting the message.

Edit Message - F7, Edit Schedule - F8

The two options are identical to the options on the *Main Menu* and are duplicated here for convenience.

Test Sign - F9

This option allows the sign to be tested. When this option is selected, the *Test Sign Menu* appears:

Rotating Columns	F1
Driver Test Pattern	F2
Quit Test Mode	F3
Exit	F10

Select [F1] or [F2] to stop any messages and start one of the test patterns. If a test pattern is running, it will be indicated by a check mark. Select **Quit Test Mode - F3** to stop running the test pattern and resume running any messages that where running before starting the test.

3.6.3 Bright/Dim (Front Lighting On Glow Cube Displays)

This display is equipped with dimming (front lighting) for nighttime viewing and can be used any time the surrounding environment lighting is low. The dimming can be controlled three ways: **1)** manually, **2)** scheduled or **3)** by photocell. To change the dimming, select **Bright/Dim** (or **Front Lighting**) from the *Message Menu.*

The *Bright/Dim Menu* will appear:

Dim	F1
Bright	F2
Scheduled Mode	F3
Photocell	F4
Exit	F10

Front Lights ON	F1
Front Lights OFF	F2
Scheduled Mode	F3
Photocell	F4
Exit	F10

Glow Cube Line Displays:

The display can be manually set to **Dim (Lights On) - F1** or **Bright (Lights Off) - F2.**

In **Scheduled Mode**, the Venus 1000 is programmed with a time to set the display to dim and a time to set it to bright. When dimming is in the scheduled mode, the system continually compares the running time to the dim (on) time and bright (off) time and changes the dimming when one of the times matches. To activate the schedule, select **Schedule Mode - F3**. A prompt will appear for the dim time and bright time. If the time shown is the one desired, press [ENTER]. When entering a new time, be sure to enter A for A.M. or P for P.M. and press [ENTER]. The **Dimming (Front Lighting) Schedule** and **Message Schedule** are totally separate.

If the display is equipped with a photocell, the dimming can be controlled automatically (select **Photocell - F4**). This is the simplest and most effective means of control since dimming (front lighting) is changed according to the light around the photocell.

3.6.4 Get Status

When selected, the programmer's console will request the status from the sign and display it on the screen:

```
(Time)      (Date) (Day of Week)        (Temp F)  (Temp C)
(Total # Frames),  (# Frames Free)
Sign: (Display Status)
Bright/Dim: (Dimming Status)
Display Size: (Size Configured)
Display Type: (Type Configured)
Technology: (Display Technology)
Remote Software Version: (Version of Venus 1000 at Sign)
Clock: (Source of Venus 1000 System Clock)
```

The following information is given:

1. Time, date and temperature
2. Memory size and amount free
3. Display status: Running - Message(s) are running
   Blank - Sign is stopped
   Schedule - Running message(s) from a schedule
   Shutdown - Running schedule with no messages running
4. Dimming Status: Manual (Bright/Dim) - Manual (Off/On)
   Photocell (Bright/Dim)
   Schedule (with schedule times)
5. Display Size Configured (# of columns)
6. Display Type (single/double faced)
7. Technology (incandescent or reflective)
8. Software version of Venus 1000 in the sign
9. Clock source: power lin 60 or 50 Hz, internal oscillator (real time clock)

The sign status is updated every minute. Press [ESC] to return to the menu.

3.6.5 Get Directory

Select this item to see a list of messages currently stored in memory at the sign. After the list of messages appears, press [ESC] to return to the menu.

3.6.6 Set Time/Date

This item allows the current date and time on the programmer's console and at the sign to be set. When selected, the *Set Time Menu* will appear:

```
Set Time      F1
Set Date      F2
Send Time     F3
Exit          F10
```

Press [F1] to set the time on the programmer's console. A prompt will appear for the current time. If the time is correct, press [ENTER]. Otherwise, enter the current time, including A for A.M. or P for P.M. and press [ENTER]. Press [F2] to

set the date. If the date is correct, press [ENTER]. Otherwise, enter the date as MM/DD/YY.

Press [F3] to set the date and time at the sign. The date and time at the sign will be set to the date and time on the programmer's console. Press [F10] to return to the *Sign Menu.*

3.6.7 Temp Offset

Sometimes the reading from a temperature sensor may be consistently low or high. This may occur due to the location of the sensor or the actual difference in temperature between the sensor location and a reference being compared (e.g. a radio station). This can be corrected by programming a plus or minus temperature offset. Select **Temp Offset - F6** to program an offset from -9 to +9 degrees Fahrenheit.

3.6.8 Disconnect

Select **Disconnect - F9** to terminate the connection with the sign. If a dial-up modem is being used, it will hang up the phone line.

3.6.9 Exit

Select **Exit** from the *Message Menu* to return to the *Main Menu.* This will **not** automatically disconnect the programmer's console from the sign.

3.7 Disconnecting And Exiting To DOS

When done changing the information on the Venus 1000 at the sign, the programmer's console must be disconnected from the sign. Select **Disconnect - F9** from the *Message Menu.* The program can now be exited and returned to DOS. Press [ESC] to return to the *Main Menu* and then press [F10] to exit the program. A prompt will appear to verify leaving the program. Answer with Y or N. The system will exit to DOS. **You should always exit to DOS before turning the computer off.** If in the \V1000 directory, type CD\ and press [ENTER] to go to the root directory.

SECTION 4: VENUS 1000 CONTROLLER

IMPORTANT NOTES:

1. **Disconnect power before any repair or maintenance work is done on the scoreboard display!**
2. **Any access to internal display electronics must be made by qualified service personnel.**
3. **Disconnect power when the display is not in use.**

The Venus 1000 controller is located inside the master display cabinet. The controller consists of a processor printed circuit board, an interface printed circuit board and a transformer - all mounted in a weatherproof polycarbonate box (refer to **Figure 1**). It is programmed by the Venus 1000 programmer's console and sends signal to the lampbanks in the display.

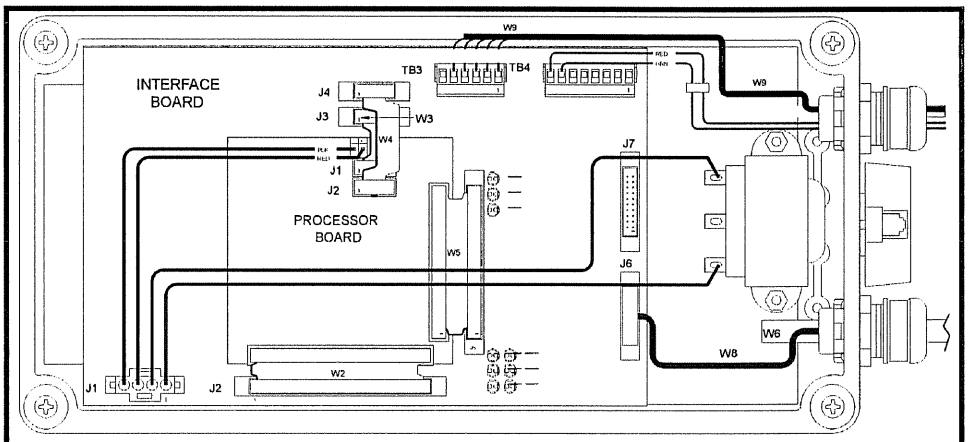

Figure 1: Venus 1000 Controller With Enclosure Ref. Dwg. C-58373

4.1 Connectors

The processor board and the interface board are connected together by four ribbon cables. The cable sizes and connections are listed below.

Cable	Processor	Positions	Interface
W2	Expansion	60	J2
W3	J1	10	J3
W4	J2	10	J4
W5	OPTO	50	J5

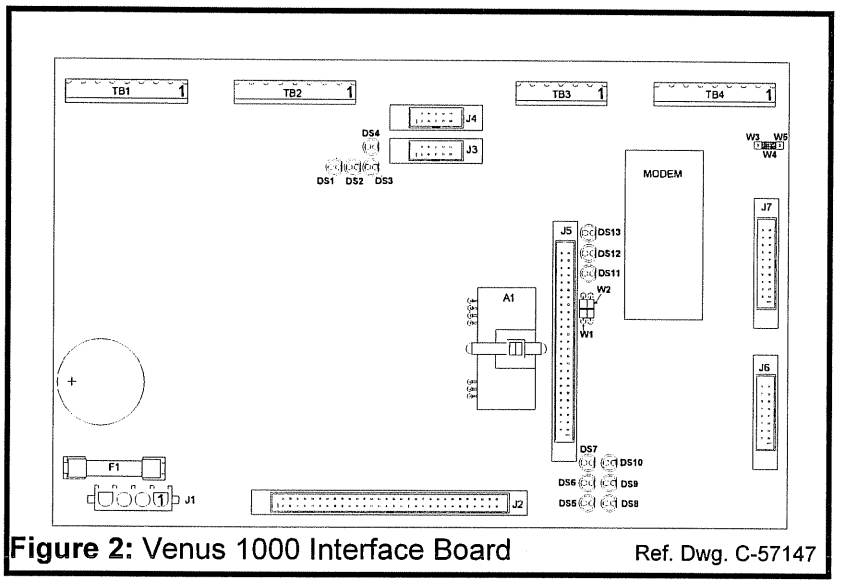

Figure 2: Venus 1000 Interface Board Ref. Dwg. C-57147

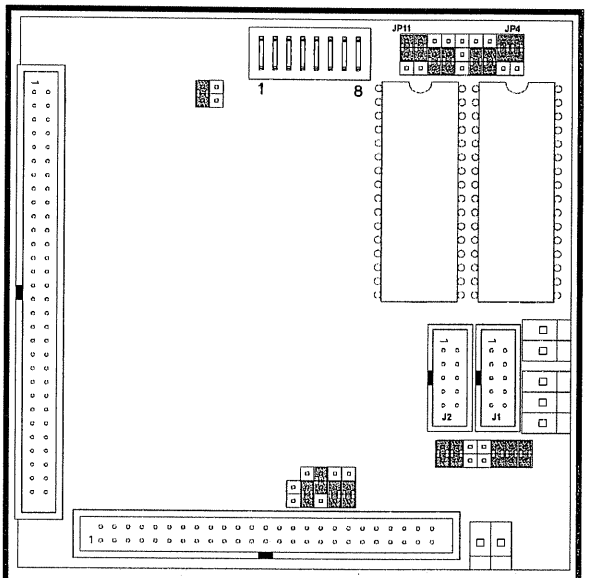

Figure 3: Venus 1000 Processor Board
Ref. Dwg. C-58366

Power from the transformer comes into the interface board on **J1**. Power for the processor board also comes out of jack J1. Signal comes in from the telephone line on **TB4** and from the temperature sensor on **TB3**. Signal goes out to the display boards on **J6** for low wattage incandescent displays; **TB1** and **TB2** for standard incandescent displays; and **TB4** for Glow Cube line displays. Refer to the interface board illustrated in **Figure 2** for the locations of these connectors. The following tables show the pin functions of these connectors.

J1	
Pin	**Function**
1	Power In (10VAC)
2	Power In (10VAC)
3	Power Out (+5 VDC)
4	Power Out (GND)

TB1		TB2		TB3		TB4	
Pin	**Function**	**Pin**	**Function**	**Pin**	**Function**	**Pin**	**Function**
1	C.L. 5+	1	C.L. 1+	1	Photocell	1	TX (RS232)
2	GND 5	2	GND 1	2	GND	2	RX (RS232)
3	C.L. 6+	3	C.L. 2+	3	+5 Volts	3	GND (RS232)
4	GND 6	4	GND 2	4	GND	4	Data+(RS485)
5	C.L. 7+	5	C.L. 3+	5	Temperature	5	Data- (RS485)
6	GND 7	6	GND 3	6	GND	6	GND (RS485)
7	C.L. 8+	7	C.L. 4+			7	Telephone
8	GND 8	8	GND 4			8	Telephone

4.2 Switches And Jumpers

Some of the configurations of the Venus 1000 controller are set through jumpers and a DIP switch package. Most of these are located on the processor board (**Figure 3**). The jumpers on the processor board are set at the factory and should not be changed. The interface board has jumper W1-W5 (**Figure 2**). W1 and W2 are connected at the factory. There is one black shunt used for W3-W5. The shunt is placed in the W5 (bottom) position for telephone modem connections. The shunt is placed in the W3 (top) position for RS232 connections. Some of the DIP switches may need to be set during installation (default is all off).

Refer to the following for the DIP switch functions and settings. Refer to the processor board illustrated in **Figure 3** for the DIP switch package location.

1	**Operation Mode**
OFF	Normal operation
ON	Display test mode

2	**Power Fail Recovery**
OFF	Power fail recovery enabled
ON	Power recovery disabled - clear RAM on power-up

3	**4**	**Connection Type**
OFF	OFF	Modem - Dial-up
ON	OFF	Modem - Leased Line
OFF	ON	Direct RS232 - No Modem
ON	ON	Reserved

5	**6**	**Data Speed**
OFF	OFF	2400 Baud
ON	OFF	9600 Baud
OFF	ON	4800 Baud
ON	ON	1200 Baud

7	**Clock Source**
OFF	Clock operates off power line frequency
ON	Clock operates off internal oscillator (Real Time Clock)

8 **Not Used**

4.3 Status Indicators

There are several LED indicators on the interface board (**Figure 2**) that show the status of the Venus 1000 controller. All LEDs are red except where noted. The LED functions are as follows:

DS1	Temperature Sensor Status ON: Temperature sensor input detected OFF: No sensor input
DS2	Photocell Status ON: Detecting a BRIGHT condition OFF: Detecting a DIM condition (or sensor is disconnected)

DS3	Temperature Sensor Power (+5 volts) (Green) ON: Power is present
DS4	Controller Main Logic Power (+5 volts) (Green) ON: Power is present
DS5	Error Code* OFF: No errors FLASHING: Error detected
DS6	Sign Status ON: Running message(s), no schedule OFF: Sign stopped ON/Blinks OFF: Schedule running message(s) OFF/Blinks ON: Schedule in shutdown (no messages) Blinks ON/OFF Steady: Running test pattern
DS7	Not Used
DS8	Clock ON/OFF: Blinks at one second intervals if using power line frequency OFF: Running off internal oscillator (Real Time Clock)
DS9	Communication ON: Receiving data from programmer's console OFF: Not receiving data
DS10	Sign Driver Status Blinks when sign driver software is running
DS11	Modem Speed ON: 1200 baud OFF: 2400 baud
DS12	Modem Auto Answer ON: Modem will answer call (dial-up only) OFF: Not Auto Answer (leased line)
DS13	Line Off Hook ON: Modem has control of telephone line OFF: Modem has hung-up telephone line.

***Error Code Indicator**

The Venus 1000 controller does several tests on power-up. During these tests, errors can be detected.

The error code LED (DS5) is read by counting how many times it blinks on. The blinking represents a two digit number. The first number is preceded by a long pause. The first and second number are separated by a short pause.

To read the error code: (**1**) wait for a long pause, (**2**) count the number of blinks before the short pause (first digit), (**3**) count the number of blinks before the long pause (second digit). Possible error codes are:

31: No modem detected (possible failed modem)
32: Modem loopback test failed (possible failed modem)
41: ROM checksum failed (program has corrupted)
42: Message stored invalid
43: RAM access error.

SECTION 5: RADIO INSTALLATION WITH VENUS 1000 CONTROLLER

At the computer:
(Radio labeled "REMOTE")

Place the radio that is **not** in the enclosure where it will have the least obstruction possible in transmitting to the radio at the display (e.g. in a window). The radios should be in line of sight of each other.

Plug the data cable provided into the radio (9-pin) and into the serial port (COM1 or COM2, 25-pin) on the computer. If the computer has a 9-pin serial port, use the 9 to 25 cable provided in the users kit with the radio data cable. Plug the wall transformer into the radio and into an outlet.

Verify that the three-position switch on the top of the radio is set to **Send** and the channel switch is set to **A**. Check the DIP switches on the side of the radio. Switches 1, 4 and 5 should be on and the rest off. Configure the Venus 1000 on the program for a direct line (RS232) connection at 9600 baud on the proper COM port.

At the display:
(Radio labeled "HOST")

The jumper near TB4 on the Venus 1000 interface board (refer to **Figure 2** in **Section 4**) needs to be placed in the **W3** position for an RS232 connection and DIP switch #4 and #5 on the processor board (refer to **Figure 3** in **Section 4**) should be turned on.

Mount the display radio enclosure where it will have the least obstruction in transmitting to the radio at the computer. It should **not** be surrounded by metal.

Use the signal cable provided to connect TB4 on the interface board to the terminal block in the radio enclosure as follows:

Venus 1000	Radio Enclosure
TB4-1 (TX-RS232)	RXDATA
TB4-2 (RX-RS232)	TXDATA
TB4-3 (GND)	GND

Connect power to 120VAC and NEUT on the terminal block in the radio enclosure.

Check the DIP switches on the radio. They should be the same as above. Both radio should have their three-position switches in the **Send** position and both on the same channel. If the transmission does not seem reliable, try setting both radios to channel **B**.

Note: Ignore any modem errors when requesting the status from the Venus 1000 or checking the LED status indicators on the Venus 1000 (the modem is disconnected when the jumper mentioned above is in the W3 position).

APPENDIX A: GRAPHIC FONTS

The following pages show the graphic fonts available on the programmer's console and their keystrokes.

7 HIGH GRAPHIC FONT


0 = GHOST


C = CAR


O = OWL


Y = MOUSE


1 = GOLF CLUB


D = DOG


P = PRESENT


Z = MOOSE


2 = SNOW PLOW


E = EYES


Q = SNAIL


a = JET


3 = TRUMPET


F = FISH


R = REINDEER


b = BIKE


4 = HAMMER


G = GUITAR


S = SHIP


c = SMALL CAR


5 = TRACTOR


H = HEART


T = TRUCK


d = DUCKS


6 = CLOVER


I = ICE SKATE


U = UMBRELLA


e = ELEPHANT


7 = HELMET


J = JACK-O-LANTERN


V = VAN


f = FOOTBALL


8 = MUNCHMAN


K = KEY


W = WHALE


g = GUN


9 = PIPE


L = LAMP


X = FIRETRUCK


h = HELICOPTER

A = AIRPLANE

M = MOTOR BIKE

B = BOAT

N = NOTES

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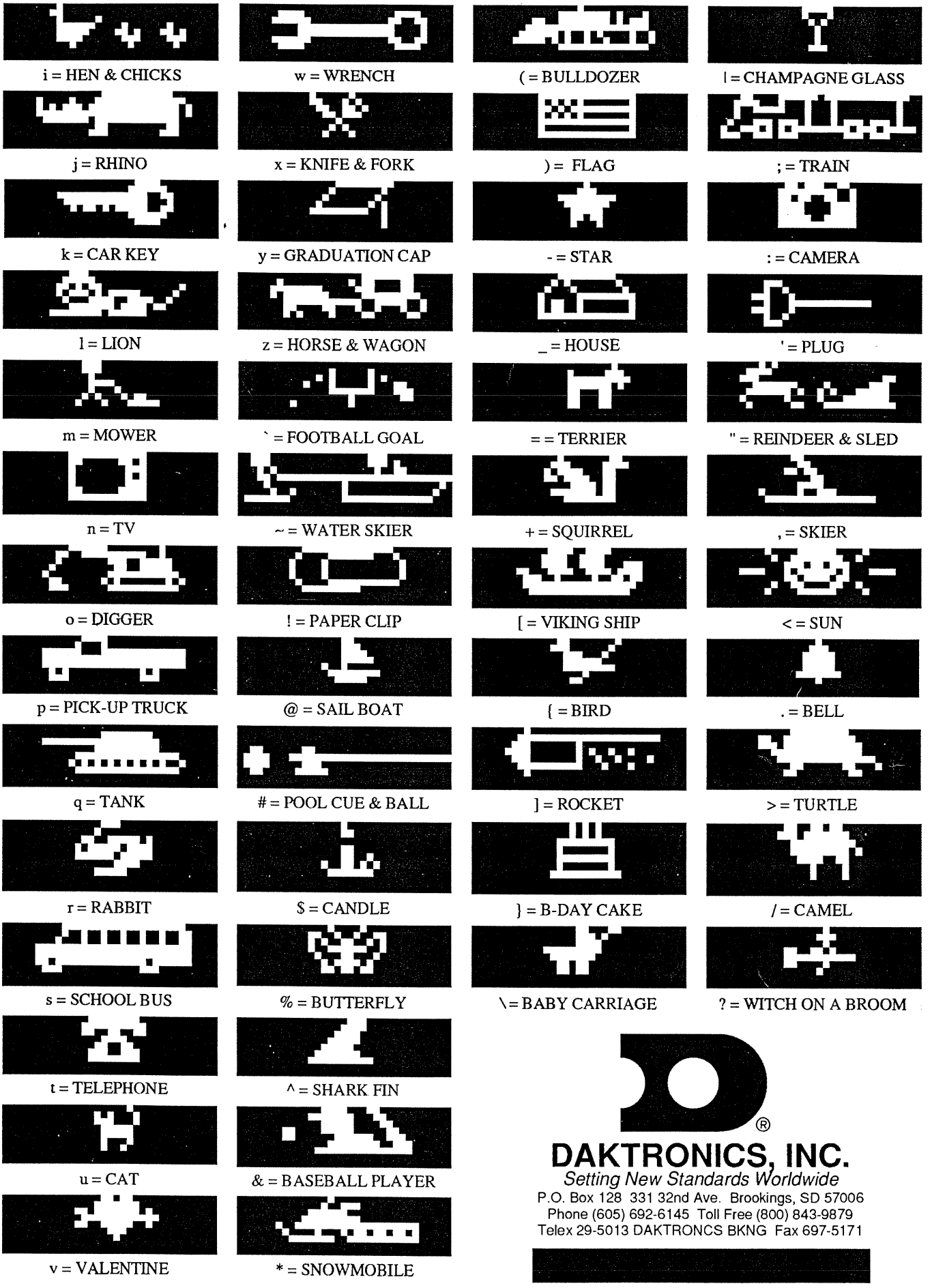

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APPENDIX B: VENUS 80 UPGRADE

Refer to the following instructions and figure to upgrade a Venus 80 to a Venus 1000.

1. Disconnect the Venus 80 from the junction box, unplug the power and remove.
2. Plug the 37-pin circular from the Venus 1000 to the junction box.
3. Plug the power for the Venus 1000 into 120VAC.
4. Plug the signal cable from the Venus 1000 into COM1 or COM2 of the computer that will be the Venus 1000 programmer's console (supplied by others).
5. For remote control, connect the Venus 1000 to a phone line instead of a computer. Set-up the computer and modem as described in **Section 2**.