



PV3500®

Fuel Site Controller

For Imperial Oil
Installation Manual

OPW Fuel Management Systems - System and Replacement Parts Warranty Statement

Effective September 1, 2002

System and Replacement Parts Warranty

OPW Fuel Management Systems warrants that all OPW Tank Gauge and Petro Vend Fuel Control systems supplied by OPW Fuel Management Systems to the Original Purchaser will be free from defects in material and/or workmanship under normal use and service for a period of 12 months from the date of installation or 15 months from the date of shipment. Additionally, OPW Fuel Management Systems warrants that all upgrades and replacement parts (new and remanufactured) supplied by OPW Fuel Management Systems will be free from defects in material and workmanship under normal use and service for a period of 90 days from the date of installation or for the remainder of the system's original warranty, whichever is greater, as set forth in the first sentence of this statement. The foregoing warranties will not extend to goods subjected to misuse, neglect, accident, or improper installation or maintenance or which have been altered or repaired by anyone other than OPW Fuel Management Systems or its authorized representative.

The buyer's acceptance of delivery of the goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.

If a claim is made within the warranted time period that any equipment and/or remanufactured part is defective in material or workmanship under normal use and service, such equipment and/or remanufactured part shall be returned to OPW Fuel Management Systems, freight prepaid. If such equipment or remanufactured part is found by OPW Fuel Management Systems in its sole judgment, to be defective in material or workmanship under normal use and service, OPW Fuel Management Systems, shall, at its sole option, repair or replace such equipment and/or remanufactured part (excluding, in all instances, fuses, ink cartridges, batteries, other consumable items, etc.)

The warranties, as set forth above, are made expressly in lieu of all other warranties, either expressed or implied, including, without limitation, warranties of merchantability and fitness for any particular purpose and of all other obligations or liabilities on OPW Fuel Management Systems part. Further, OPW Fuel Management Systems neither assumes, nor authorizes any other person to assume for it, any other liability in connection with the sale of the systems, or any new/replacement part that has been subject to any damage from any act of nature or any *force majeure*.

The term "Original Purchaser" as used in these warranties shall be deemed to mean the authorized OPW Fuel Management Systems distributor to which the system or any new/replacement part was originally sold. These warranties may be assigned by the original purchaser to any of its customers who purchase any OPW Fuel Management Systems systems or new/replacement parts.

The sole liability of OPW Fuel Management Systems, for any breach of warranty, shall be as set forth above. OPW Fuel Management Systems does not warrant against damage caused by accident, abuse, faulty or improper installation or operation. In no event shall manufacturer's liability on any claim for damages arising out of the manufacture, sale, delivery or use of the goods exceed the original purchase price of the goods. In no event shall OPW Fuel Management Systems be liable for any direct, indirect, incidental or consequential damage or loss of product.

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Warnings

RISK OF ELECTRIC SHOCK! This unit contains an internal power supply. LETHAL voltages are present even when unit is unplugged from AC outlet. No user-serviceable parts inside. Refer servicing to qualified service personnel.

- Installation must comply with the National Electrical Code (NFPA No. 70), the Automotive and Marine Service Station Code (NFPA No. 30A) and the Compressed Natural Gas Code (NFPA No. 52.) Installers are responsible for any applicable local codes.
- **FIRE OR EXPLOSION HAZARD:** Do not install the unit in a volatile, combustible or explosive atmosphere (the so-called “hazardous area” as defined in the National Electrical Code).
- Protect all enclosures from severe vibration, extreme temperatures and excessive humidity.
- The PV3500 UPS system contains a battery to power down the unit during a power failure. **THE BATTERY CAUSES HAZARDOUS CONDITIONS IN SEVERAL WAYS:**

HAZARDOUS LIVE PARTS inside this unit are energized by the battery even when AC plug is disconnected.

The battery may EXPLODE if incorrectly installed. Refer replacement to qualified individuals. Only use EXACT factory replacements for the battery. Dispose of used batteries according to manufacturer’s instructions.

- **FIRE HAZARD:** DO NOT add boards or drives to the PV3500 that exceed the PV3500 power supply rating of **200 watts**.
- **STATIC DANGER:** DO NOT touch PC board connectors! Integrated circuits are sensitive to static electricity. To avoid IC damage, before touching a PC board, touch a grounded surface (the metal PV3500 chassis will work). This helps discharge static electricity from your body .

Do not attempt to repair, replace or alter any part or circuit beyond what these instructions discuss.

Notes:

Equipment Overview

PV3500 Specifications

Dimensions	Width: 15.75" (40.0 cm) Depth: 15.75" (40.0 cm) Height: 7.125" (17.1 cm)
Weight	28 lbs (12.7 kg)
Power Requirements	115 / 230 VAC, 50/60 Hz, 200W max.
Power Backup	Built-in uninterruptable power supply with battery
Temperature Rating	41 - 122° F (5 - 50° C)
Processor	486SX/DX @ 66 MHz
RAM	4 MB standard, expandable to 32 or 64 (depending on model)
Hard drive	270 MB standard (540 MB optional).
Floppy drive	3-1/2" high-density 1.44 Mb capacity
LCD display	2 x 16 character
Keypad	UP, DOWN, LEFT, RIGHT, ENTER for LCD display
Ports	RS-232 communication port (COM1) Parallel printer port (LPT1) VGA monitor port DIN PC101 keyboard port RJ45 RS232 communication ports (two) RJ11 2,400 baud modem ("network modem") port RJ11 14,400 baud modem ("download modem") port
Options	Journal printer DPL (direct pump loop) Module RS-485 module POS interface Credit authorization capability.

Some options are explained later in this manual. Contact Petro Vend for details on any accessory or option.

Cables and Accessories

(Not all may be included with your system)

20-1532	Parallel Printer Cable, 6'
12-3003	RJ-45 Cable, 25'
20-7054	Current Loop Module
20-7064	RS-485 Interface Module
20-1520-1	DB9-to-RJ45 DCE Cable, 25'
12-3017	RJ-11 standard phone cable, 7'

Rear-Panel View

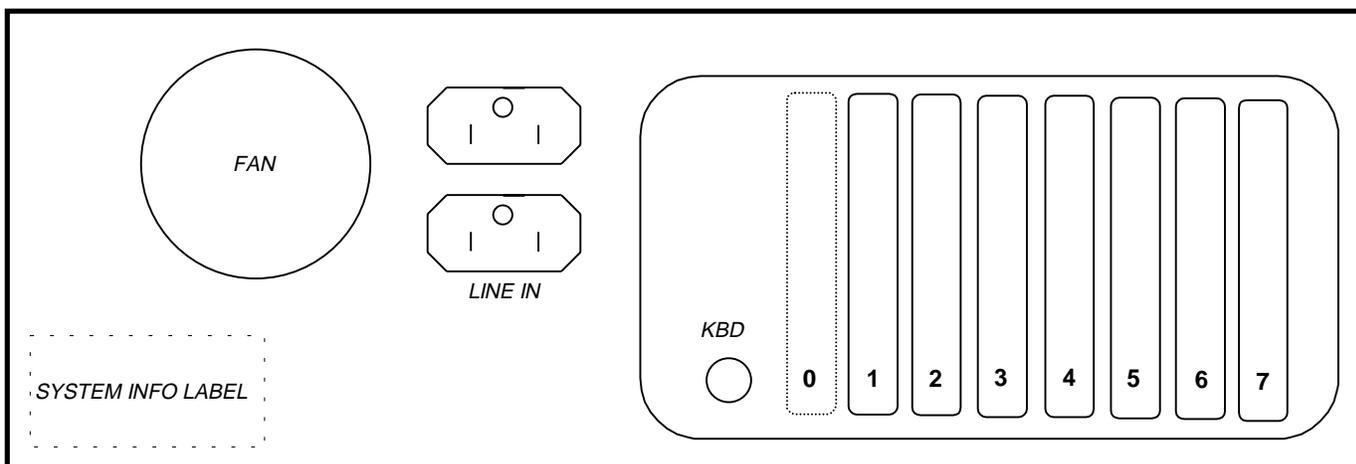


Figure 1 - PV3500 Rear Panel

The back panel (Figure 1) of your PV3500 has a socket for AC line input, a keyboard socket, seven card slots, and a fan opening which must not be blocked when installing the unit. The *bottom* AC socket is for the supplied line cord. **DO NOT attempt to remove the protective cover and use the TOP socket - damage to the backup power supply may result.**

The keyboard socket, just to the left of the slots, is for a standard PC keyboard. You need a keyboard (and monitor) to execute DOS (disk operating system) applications and commands for copying or listing files and directories. Not all systems require a keyboard; most system configuration is done with a laptop or other personal computer in any case. Setup is explained in your *PV3500 Operator's Guide*.

The seven slots (Slot "0" is blank - see Figure 1) typically contain the following cards (though this varies from system to system, depending on your particular hardware):

- SLOT 1:** *IDE® Drive Controller Card.* This card contains one parallel printer port (LPT1) for your journal printer, and two serial ports (COM1 is for technical diagnostics while COM2 is used internally by the computerized power backup system).
- SLOT 2:** *Four-Port Serial Card.* Contains four RJ45 sockets, recognized as COM13, 14, 15 and 16 from *bottom to top*. For Imperial Oil installations, *COM13 attaches to the RS-485 Interface Module and COM14 goes to the Datapac modem.*
- SLOT 3:** *Not used in this application.*

SLOT 4: *Not used in this application.*

SLOT 5: *14.4 kBaud Modem Card.* This “high-speed” modem communicates with HelpDesk personnel for troubleshooting or software downloads. The bottom port of this card attaches to your site phone line.

SLOT 6: *Not used in this application.*

SLOT 7: *Not used in this application.*

Front Panel View

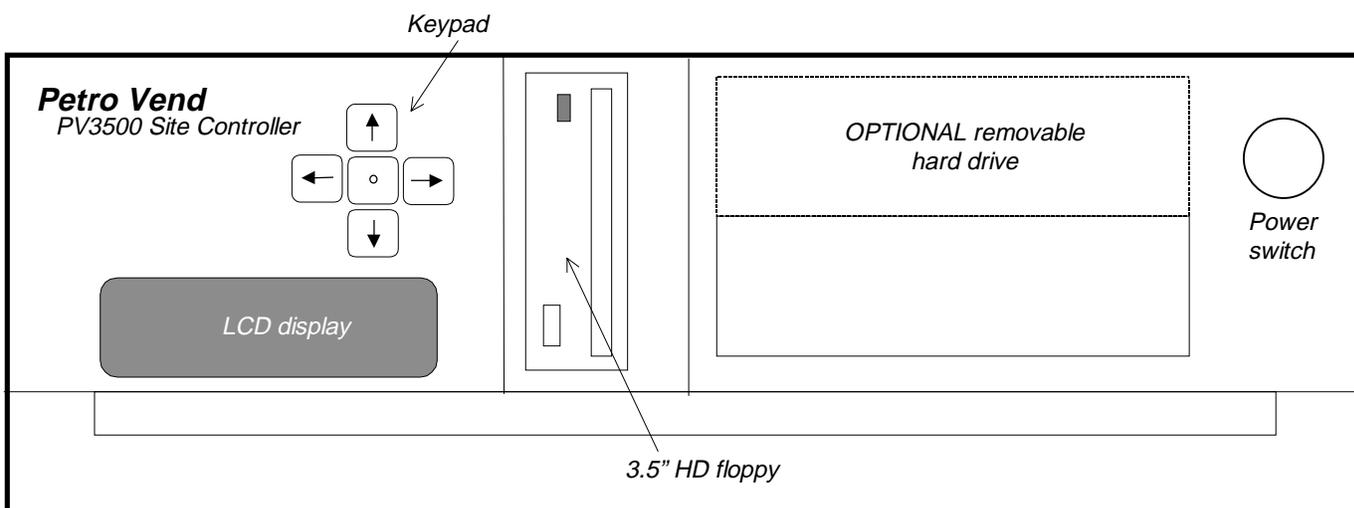


Figure 2 - PV3500 Front Panel

The front panel of your Site Controller contains an LCD readout for system status, a five-key keypad, a 3-1/2" high-density (HD) floppy disk drive and the power switch. An OPTIONAL removable hard disk drive can be installed in the top drive bay as well.

LCD Display

During normal operation the message **PV3500 system Running** is displayed. Other messages appear during power-up and power-down, and when backing up or restoring system files to and from the floppy drive. *NOTE: For options like listing system files or using DOS, a keyboard and monitor must be connected.*

Keypad

Use the five keys to respond to prompts on the LCD display. These keys are primarily used when backing up or restoring files to and from the floppy drive.

Floppy Disk Drive

Use the 3-1/2" high-density (1.44 MB) drive to back up database files or to load new system software.

Removable HDD

The OPTIONAL removable hard disk drive lets you separate the main working drive from the PV3500.

Power switch

Toggle ON/OFF. ON begins the system power-up sequence (see Page 14). OFF begins the normal power-down sequence (see Page 15).

Notes:

Installation

Installation procedures are grouped into Basic Installation (this section, for all systems) and Peripheral Installation (for all accessories like journal printers and interface modules that attach directly to the PV3500). Peripheral installation follows this Basic section.

Overview

Basic installation falls into three general parts: finding a suitable location for the controller (it weighs nearly 30 pounds, so do not put it on a flimsy shelf or table); connecting pump control, fueling terminal(s), modems, and telephone lines; and configuring your PV3500 for your particular site with the setup program.

1. **Place the enclosure on a shelf** in such a way that you can see the front panel. Leave a few inches of space behind the chassis to connect wiring, etc. Plug in the line cord.

WARNING: *DO NOT block the fan opening on the rear of the enclosure!*

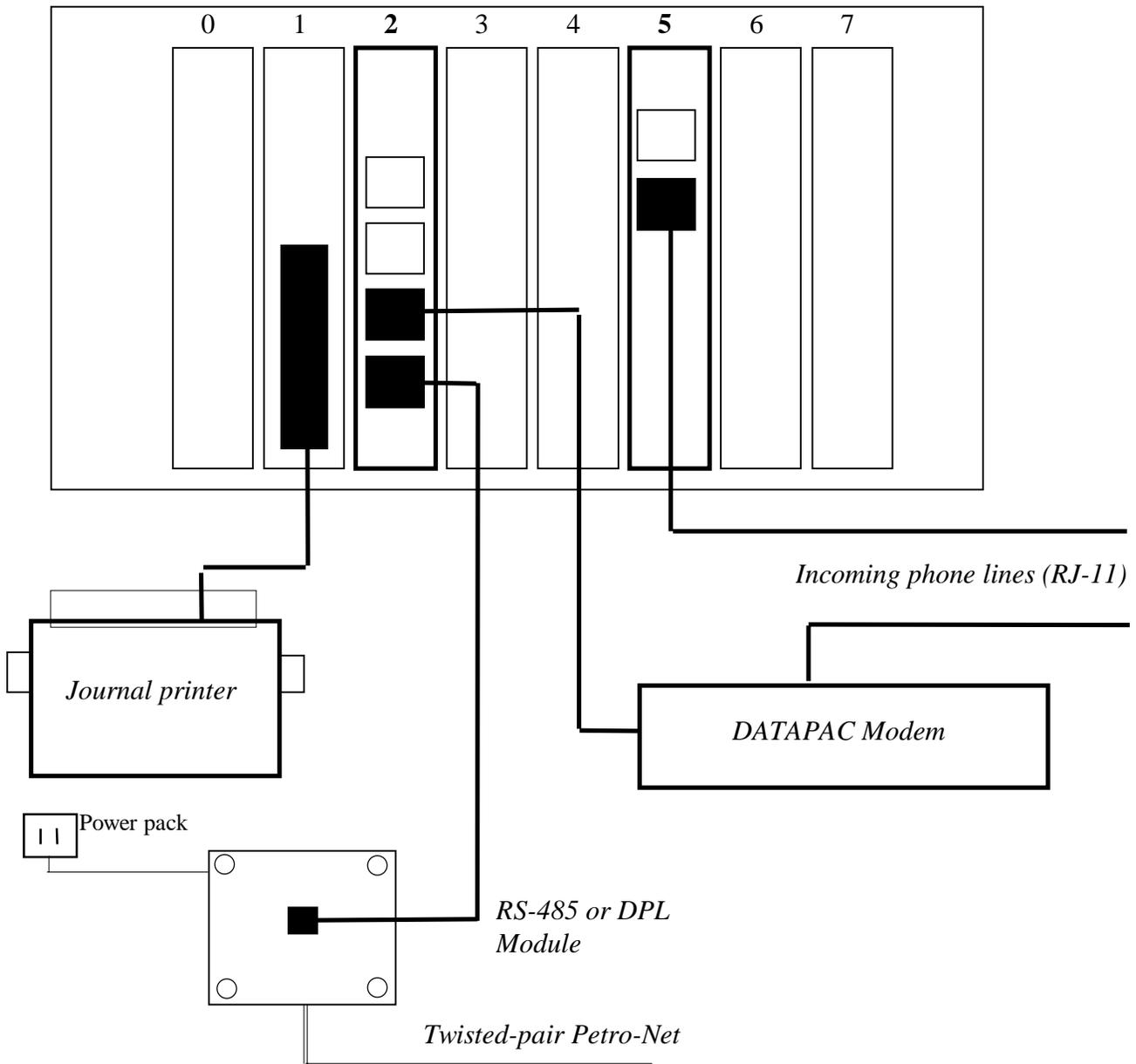
2. **Attach the Fueling Terminal connection.** This is an RJ-45 cable running from the COM 13 port in the four-port serial card (Slot 2) to the interface module where Petro-Net comes in from your fueling terminal (Petro Vend's OPT or FIT for example). Use 20-7054 interface cable.
3. **Attach the telephone line connections.** You should have a separate phone line for the PV3500 internal Download/Maintenance modem (14.4 kbaud). Connection to the Datapac network for transaction authorization is through the Datapac external modem. Modem connections are explained on Page 10.
4. **Configure the PV3500 for your site.** Use the *HelpDesk Utility* described in the *PV3500 HelpDesk Utility Guide*. HelpDesk runs on a separate PC, connected to the PV3500 either remotely through the 14.4 modem card or directly through an unused serial port.

Rear Panel Connection Diagram

See Figure 3. The following are the only connections to be made on an Imperial Oil PV3500 Site Controller. Step by step begins on the next page.

1. Site phone line
2. Datapac external modem
3. Journal printer (also see Page 16)
4. RS-485 Interface Module OR DPL Pump Loop module (also see Page 21)

Figure 3- Rear panel of PV3500



Step-By-Step Hookup

Refer to Figure 3 on the previous page.

1. Connect one end of an RJ-11/RJ-11 (male-to-male) telephone cable to your site's telephone jack.
2. Connect the other end of this cable to the 14.4 KB modem card in SLOT 5 of the PV3500. The cable goes to the BOTTOM jack on the modem card. This is the "high-speed" modem used for downloading software.
3. Connect one end of a second RJ-11 male-to-male cable to the Datapac modem network (LINE) port.
4. Connect the other end of the RJ-11 cable to either a second site phone line or a "T" adapter on the first phone line.
5. Connect an RJ-45 cable from the Datapac modem device port to PORT 14 on the four-port serial card (SLOT 2 of the PV3500). Port 14 is the second from the bottom port.
6. Connect a parallel printer cable from your journal printer to the parallel port on card in SLOT 1 of the PV3500.
7. Connect a second RJ-45 cable to the RS-485 or DPL module. Attach the other end of this cable to PORT 13 of the four-port serial card. Port 13 is the bottom port on this card.
8. Make sure all devices have power. **IMPORTANT:** *The PV3500 should be the first device powered up in the system.*

After powering up the PV3500 (power-up sequence described in the next section), power up the Datapac modem, the RS-485 or DPL module power pack, and the journal printer.

Notes:

PV3500 Start-Up

The following is the typical procedure for set-up and preliminary operation of the PV3500 Site Controller:

1. Gather and record your site information.
2. Configure the database working files.
3. Load the database working files (the “.DBF” files) in the BASE directory.
4. Physically connect other system components (fueling terminals, pump control terminals, etc.) to the PV3500. See the *PV3500 Installation Guide* for details, and for module and other interface descriptions.
5. Power up the system
6. Back up the hard drive database files to floppy disk

Site Controller File Structure

The PV3500 HelpDesk program must be run on an outboard computer (typically on-site with a laptop). Remote site configuration files can be modified either by downloading them from the remote to your HelpDesk computer. Some remote files can be modified on-line. See the PV3500 HelpDesk Manual.

The C: drive in your PV3500 must contain the directory structure shown on page before the system will operate properly. The only two files in the “root” directory of C: are the AUTOEXEC. BAT and CONFIG.SYS files.

At the C:> prompt, type **PV3500/?** for a list of all system tasks, along with their function, date of creation and version. It is suggested you create a new folder or directory (DOS command MKDIR) for each major revision or version of software you install.

Normal Power-Up

The PV3500 should be the first device powered up in the system.

1. Push the front-panel POWER button to turn the unit ON.
2. Observe the following sequence of messages (about 45 seconds) on the front-panel LCD display:

U.P.S. Ver. X.X	The Uninterruptable Power Supply firmware (PROM) version number.
115(230) VAC detected	Line voltage is present in unit.
U.P.S. Ready	The UPS is ready to safely bring the system down in case of a line voltage failure.
Reset in 00:00:59	This is the time remaining to you to do a system setup. If the system does not start correctly after this time elapses, it cycles the countdown clock and tries again.
Application is loaded	The PV3500 program has been loaded into RAM, but is not yet running.
System not initialized	Application is being initialized, please wait.
System Running	Alternates with version. The PV3500 program is now up and running.

At power-up, the UPS system auto-detects incoming voltage and compares it to a pre-set "undervoltage" level. The factory-set undervoltage is 85%; this can be adjusted on the power supply circuit board.

To enter this level of setup, hold down both the UP and DOWN arrow keys, and then turn on the power.

Normal Power-Down

The UPS (Uninterruptable Power Supply) in your Site Controller brings the system down for a “soft landing” during a power failure, or when the unit is simply turned off. The UPS essentially maintains power to the microprocessor and memory long enough for volatile data (that in system RAM) to be written to the hard drive. It then turns off the PV3500.

Turn the PV3500 OFF (this essentially simulates a power failure), or unplug the unit. Observe the following sequence of messages (total about 30 seconds) on the front-panel LCD display:

Brownout	LCD display flashes this message; the unit begins to beep to signal loss of line voltage.
Powering down	The UPS is activated. The UPS battery is now powering all internal components of your Site Controller.
Micro on battery	This message confirms the PV3500 CPU is indeed running off the UPS battery. The contents of system RAM are now being written to the hard drive.
Power invertors off	The DC-to-AC converter in the UPS is OFF.
Power off to main CPU	Battery power is turned off.

The LCD screen now goes blank. The power-down is complete.

Brownouts are recorded in the system “log file” (described in the HelpDesk manual). The PV3500 has two user-adjustable thresholds: the “warning level” where the BROWNOUT signal flashes on the display, and the EMERGENCY level, where the unit actually shuts down. Call the HelpDesk for more information on setting these thresholds.

Peripheral Overview

This section describes the standard journal printer, the DPL module, and the RS-485 Interface Module. The Datapac modem has its own instructional material.

Journal Printer

Petro Vend supplies the EPSON LX300 printer as the standard “journal printer.” When you attach a printer to your PV3500, you can see (and record for filing purposes) transactions on paper *as they happen*.

- The printer must be within 12 feet of the PV3500.
- The printer connects to the PV3500 LPT1 port. This port is on the Controller card (SLOT 1).
- Remember to plug the printer into a wall outlet.
- Refer to Epson’s operator manual to operate the printer.
- HelpDesk personnel: Use the Journal Printer set-up option in the PV3500 Program, under the **Site** pulldown in the main menu. See your PV3500 Operator’s Guide or HelpDesk Utility guide for details.

DPL (Direct Pump Loop) Control

DPL uses the “pump control” RJ-45 serial port in your PV3500. RJ-45 pump control port for DPL is determined with your Site Configuration worksheet (see the *PV3500 Operator’s Guide*).

DPL works through a Multi-Protocol Interface Module that handles RS-485, RS-232 or current loop, depending on your pumps. Petro Vend’s multi-protocol module is described on page 19.

This section does not describe installing or servicing electronic fuel pumps or dispensers.

- An RJ-45/RJ-45 cable runs from the “pump control port” on your PV3500. For Imperial Oil this is PORT 13 (bottom port in Slot 2).
- Connect the other end of this cable to the RJ-45 socket on the Interface Module. This module is typically RS-485 in Imperial Oil applications.
- AFTER powering up the PV3500, remember to plug the Interface Module power pack into a wall outlet.

NOTES:

RS-485 Interface Module

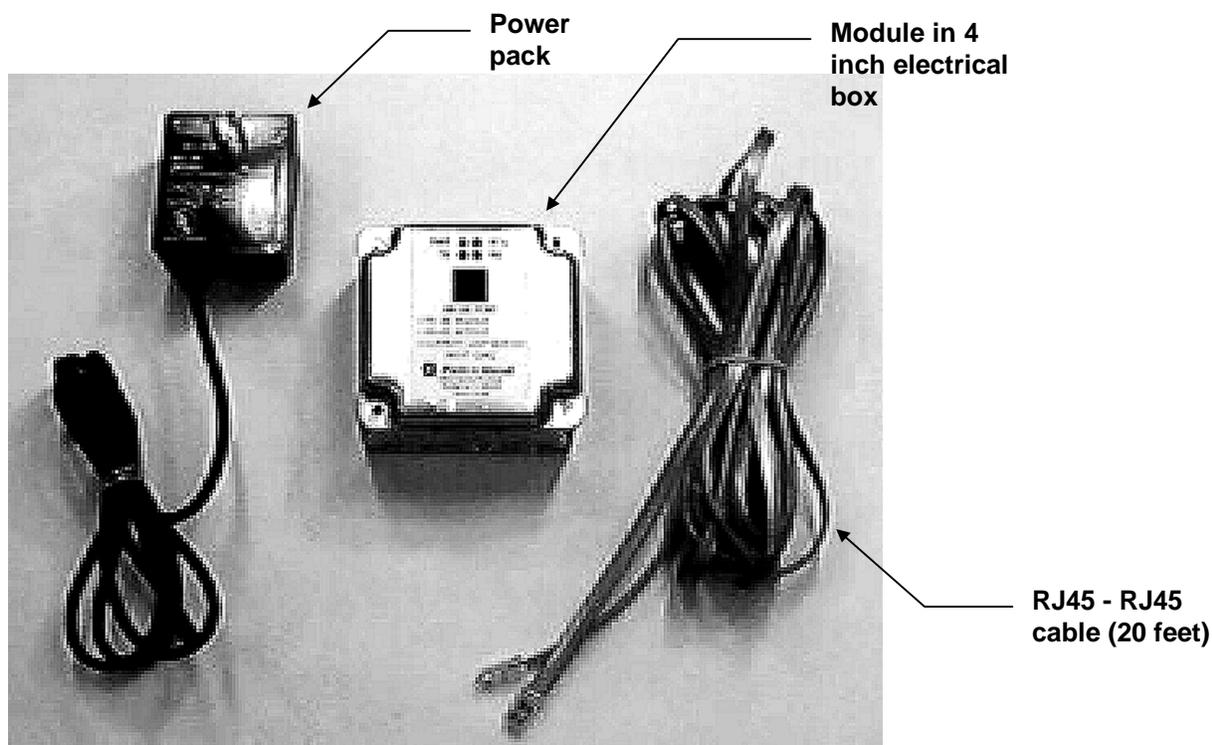


Figure 3 - RS485 Interface Kit

The RS-485 module kit (Figure 5) converts RS-232 signals recognized by the PV3500 to the RS-485 format in the twisted-pair wiring and devices attached to Petronet (OPTs, FITs, PCTs and various CRINDs). Up to 32 devices can be attached to one module.

The module kit consists of the following:

- The module itself, made up of a standard 4" J-box with cover, and a PC board (Figure 5)
- One 25-foot PV3500-to-module cable (RJ-45 to RJ-45)
- One plug-in power supply.

LEDs on the module cover indicate power, and the status of the communication lines. Several jumpers inside the module can be set to control baud rate and other communication parameters.

Optical isolation in the RS-485 module protects the PV3500 from external electrical noise. The maximum cable length from the module to the PV3500 is 50 feet.

Inside View

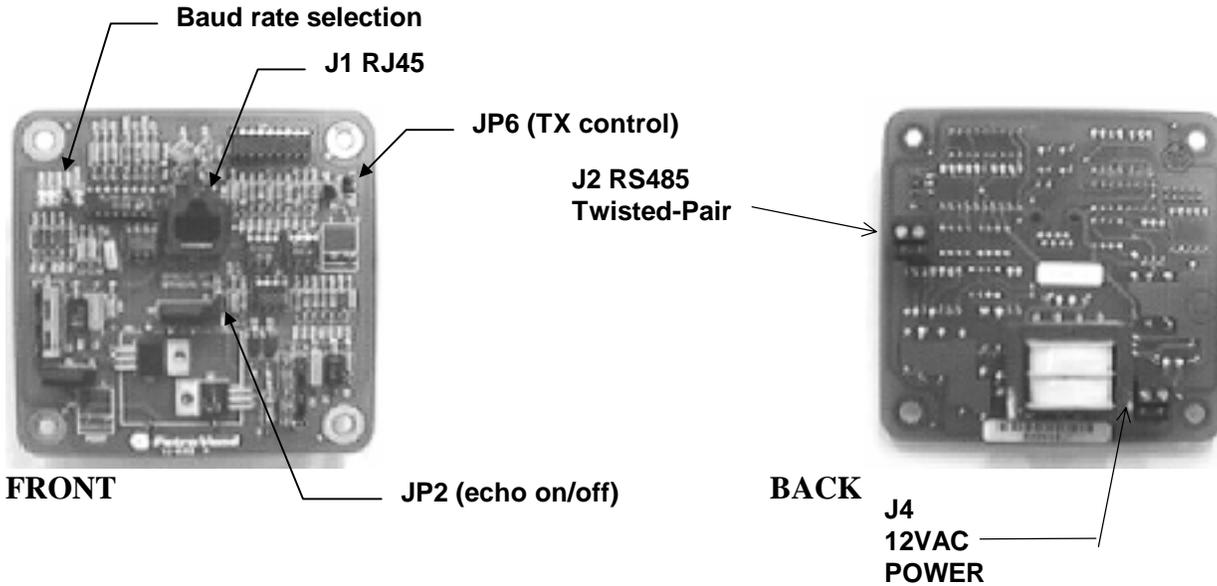


Figure 4 - RS485 PC Board

Board Jumpers

The front of the RS-485 Module PC board contains the RJ-45 socket (“J1”), jumpers (“JMP2, JMP6” and a baud rate bank of jumpers) and LEDs, The back of the board contains the connectors for twisted-pair and power. *NOTE: The “J2” and “J4” designations are on the front of the PC board, while the actual connectors are on the back.*

Jumpers #	Function	Comments
<i>Not numbered</i>	Baud Rate Select	Place jumper on pin pair corresponding to desired baud rate: 1,200; 2,400; 4,800; 9,600 or 19,200. Default is 9,600.
JMP6	Data TX (Transmit) control	Automatic (AUTO) or manual (MAN) Place jumper on top two pins for AUTO, on bottom two for manual. Default is AUTO.
JMP2	Echo control	ON or OFF. Remove jumper for ECHO ON, install it for ECHO OFF. Default is ECHO OFF (jumper ON)

RS-485 Module Installation

Read carefully before attempting installation. As with any Petro Vend installation, the maximum combined length of all twisted-pair cable to a PV3500 is 5,000 feet.

Do not use the RS-485 module as a twisted-pair tie-point! Use a separate junction box to tie wiring from all your peripherals together, and THEN run a single twisted-pair to the interface box.

1. Mount the module to a wall at a location within reach of the power pack cable. *NOTE: Though you can extend the power pack cable to the module, the module itself CANNOT be farther than 50 feet from the PV3500 to insure good data communication.*
2. Install half-inch rigid steel conduit for the wiring from your peripherals (typically the RS-485 communication wiring tie-point) to the module.
3. Plug the power pack into a grounded wall outlet.
4. Route the power pack output cable through a strain relief or cable clamp and into the module through one of the knockouts.
5. Trim the output cable to a suitable length inside the module. Strip back the outer sheath to expose the three wires.
6. Cut the red wire (not used) flush to the outer sheath. Strip about ½” of insulation from the white and black wires.
7. Connect the white and black power wires to the J4 (POWER) connector on the back side of the module PC board (Figure 14). Power connection polarity is NOT important.

Notes:

Appendix A

Database Format

The PV3500 data base lets user save their site configuration data, card layouts, files and transactions in an orderly manner. The database uses Dbase IV[®] compatible file formats. Record types are grouped into four types, A-D.

A list of record types appears on the following page.

Type A Records

Type A records are critical, and must be backed up *constantly*. Transaction records are an example of Type A records. During backup in a Dual-Drive system (optional), Type A records are simultaneously written to both the Primary and Secondary drives.

If one or the other hard drive (or partition on a hard drive) crashes, the record will be written to flash RAM and the functional drive. If BOTH hard drives fail, the Type A record will be written to flash RAM only (if there is room). *No transactions will be permitted in a system where transactions cannot be saved.*

Type B Records

Type B records are backed up *daily*. A positive card file is a good example of a Type B Record. At the scheduled system backup time, these records are written to the Secondary drive. You can also back these up manually at any time, without waiting for the scheduled backup time.

Type C Records

Type C records are backed up only when the record changes in some way. A System Messages file is an example of this type of record.

Type D Records

These records are not user-alterable. Type D records are created on both hard drives during factory system configuration, and are NOT periodically backed up. An example of a Type D record is a Printer Font record.

General Record Types

Record Name	Record Type (see page)	Description
Beeper	D	Statistics for a specific beeper.
Delivery	B	Tank and unit product deliveries.
DspType	D	Statistics for a specific display type.
DspFont	D	Statistics for a specific font in a specific display type.
DspPict	D	A graphic image for a specific display type.
Hose	B	Pump hoses.
IntrfTyp	D	A specific interface type (DPT loop, POS control, PetroNet, etc.)
Journal	C	Journal printer statistics.
KeyType	D	A specific keyboard type.
Language	D	A PetroVend language type.
OnOffSch	C	Time to turn the site ON and OFF.
Operator	C	User permissions and passwords.
OperHstr	B	Each logon and logoff to and from the system.
Permiss	C	The contents of a Group Permission.
Port	C	Statistics on a specific port.
PriceSch	C	When to use primary and secondary prices.
PrnFont	D	Specific font for a specific printer.
PrnPict	D	A specific graphic image for a specific receipt printer.
PrnType	D	A specific receipt printer type.
ProdGrp	D	PetroVend-defined product group.
ProdRes	C	Which products constitute a product restriction.
Product	C	The name of a product, along with the product's cash and credit prices.
Pump	B	Statistics on a single pump.
PumpType	D	Specific PV-defined pump type.
RcpType	C	Variables that will be printed on a receipt.
RcpBody	C	Text and formatting by printer type and language for a specific receipt type.
RdrTypr	D	A specific type of card reader.
Script	D	The script for a single input device.
ScriptSet	C	A set of scripts to use for an authorization.
Site	C	Basic site information.
SysMsg	C	A display message by language and display type.
Tank	B	Basic tank data for a specific tank.
Terminal	C	Basic data for a specific terminal (FIT, DPT, etc.)
Transact	A	A specific transaction.
TrmnType	D	A PetroVend-determined terminal type (in-pump reader, OPT, DPT, etc).

Card Record Types

Card Record Name	Record Type (see Page)	Description
BitMpFmt	C	The format of a specific card type (“bitmap” card file).
Accounts	B	Specific account of a card type.
CardFmt	C	The format of a card string for a card type.
CardProd	C	The cross-table: Card Type Product Restrictions VS Site Product Restrictions.
CardType	C	A set of cards differing from others because of ISO string.
CustMsg	C	A message for a card type, account or card.
LangTbl	C	Converts PetroVend languages to or from Card Type languages.
Network	D	Offsite network validation details.
OdomRes	C	Odometer reasonability table for a specific card type.
PosFile	B	The positive card file.
NegFile	B	The negative card file.
BitMapFile	B	The bitmap card file.

Notes:

Appendix B

Site Controller BIOS Setup

This appendix explains how to set the AMI basic input-output system in your PV3500. BIOS tells your PV3500 about its environment as it powers up. BIOS setup is usually only done at the factory, or when the PROM memory chip containing the BIOS program is replaced or corrupted.

To set BIOS, you must have a monitor (the video card is in SLOT 7 on the back, the rightmost) and keyboard attached to the PV3500.

The Uninterruptable Power Supply has a self-monitor, a “watchdog,” that automatically restarts the system either in one minute (normal mode) or six hours (setup mode). You must first change the watchdog from one miute to six hours.

1. The UPS “watchdog” selection switch is a DIP switch . To get at this switch, remove the case, and then the front panel, of the Site Controller.

The DIP switch is centered on the PC board, about two inches back from the front of the unit. You will need a long, slender tool, non-conductive preferred, to depress the *rightmost* switch position. Call the HelpDesk for details.

2. After changing the setting of the watchdog switch, replace the front panel of the Site Controller and power it up. The LCD display should read (after power-up diagnostics) as follows:

Reset in 5:59:00

The timer should be counting down from six hours. You now have plenty of time to set the BIOS.

3. Do a “warm start” by pressing **CTRL ALT DEL** at the same time. When the message **Press DEL to enter SETUP** appears, press the DEL key to enter the BIOS setup mode.
4. Press the TAB key to move to the DEFAULT selection, then select OPTIMAL. Select YES to load optimal settings.
5. Select SETUP, then STANDARD. Set the following.

If you are installing a new hard drive, it must be partitioned as 60% DRIVE C and 40% DRIVE D. If you are attempting to recover data from another drive, be sure you have a correctly partitioned and configured hard drvie ready to accept the data.

It is CRUCIAL to correctly and individually define the master disk drive parameters. DO NOT use the Auto-Detect feature of BIOS setup to obtain drive parameters - it will produce erroneous settings.

Date and time
FLOPPY A **1.44 MB 3-1/2**
FLOPPY B **NOT INSTALLED**
MASTER DISK **USER 944 14 65535 944 40** (select USER and press ENTER
 to change values)
SLAVE DISK **NOT INSTALLED**

6. Press ESC to exit and save changes.
7. Select SETUP, then ADVANCED. Set the following. *NOTE: BIOS versions differ slightly. Not all the following settings may be in your particular version. If you see a setting not listed below, simply leave it at the default.*

TYPEMATIC RATE	DISABLED
SYSTEM KEYBOARD	ABSENT
PRIMARY DISPLAY	VGA/EGA
ABOVE 1MB MEMTEST	ENABLED
MEMTEST SOUND	ENABLED
HIT "DEL" MESSAGE DISPLAY	ENABLED
EXTENDED BIOS RAM AREA	0:300
WAIT FOR F1 IF ANY ERROR	DISABLED
SYSTEM BOOT UP NUMLOCK	ON
FLOPPY DRIVE SEEK AT BOOT	DISABLED
SYSTEM BOOT-UP SEQUENCE	A: THEN C:
SYSTEM BOOT-UP CPU SPEED	HIGH
EXTERNAL CACHE	DISABLED
INTERNAL CACHE	ENABLED
INTERNAL CACHE WB OR WT	WRT-THRU
PASSWORD CHECKING	SETUP
VIDEO SHADOW C000, 32K	ENABLED
SHADOW C800	DISABLED
<i>ALL OTHER SHADOW SETTINGS</i>	DISABLED
PRIMARY IDE 32 BIT TRANSFER	DISABLED
PRIMARY IDE BLOCK MODE	DISABLED
PRIMARY IDE LBA MODE	DISABLED
SECONDARY IDE PRESENT	NONE

OTHER SETTINGS NOT LISTED ABOVE:

HALT **NO ERRORS**. POWER MANAGEMENT=**NO**, CPU TYPE = **AUTO**.

8. Press ESC twice to save settings, exit, and restart the Site Controller.
9. After reboot, turn system OFF.

10. Remove front cover (if not already off), and reset the watchdog DIP switch to the 60 SECOND position (see step 1).
11. Replace all covers and turn the Site Controller ON.

This completes the BIOS setup. If you are still having problems with your system, contact Petro Vend Technical Service.



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