



EXPERT FUEL MANAGEMENT
SOLUTIONS FOR SITE
OPERATORS WORLDWIDE

Fuel Control Systems



THE GLOBAL LEADER IN FUELING SOLUTIONS SINCE 1892



LEADING THE WAY

OPW Fuel Management Systems is part of OPW Fueling Components, the global leader in fueling solutions for commercial and retail fueling operations. The company markets its products through four primary business units: OPW Fuel Management Systems, OPW Dispensing Products, OPW Environmental Systems, and OPW Fueling Containment Systems Fueling Products. From these four groups, the company's vast product offering includes automated fuel management systems, tank gauging equipment, dispensing nozzles for gasoline, diesel, vapor recovery, swivels, breakaways, valves and fittings; underground and above ground storage tank equipment, spill containers, overfill prevention devices, secondary containment sumps and flexible piping.

OPW implements Six Sigma Continuous Quality Improvement tools, Lean Manufacturing processes, ISO 9001:2000 laboratory and field testing to ensure the highest quality standards and integrity for all of our products.

OPW FUEL MANAGEMENT SYSTEMS: EXPERTS IN FUEL MANAGEMENT SOLUTIONS WORLDWIDE

OPW Fuel Management Systems is focused on providing automated fuel control systems and tank gauging solutions designed to help fueling businesses effectively manage one of their biggest assets – fuel. Specifically designed for the rugged demands of unattended fueling operations, OPW's accurate and reliable PetroVend fuel control systems enable operators to eliminate error prone manual entry systems and significantly improve fuel tracking for tax purposes, allocate fuel expenses for job costing, eliminate fuel theft, improve driver accountability and regain control of their valuable fuel assets. OPW's high quality, low cost tank gauging systems help operators centralize and improve the accuracy of their fuel inventory management through automated collection, storage and real-time reporting of fuel inventories, deliveries and leak tests. Offering a complete line of tank gauges, probes, sensors and leak detectors, OPW Tank Gauge systems are built for monitoring above ground and below ground tank installations for inventory control and to ensure environmental compliance.

If you're interested in improving your profitability through effective fuel management, it's time to contact OPW Fuel Management Systems – the experts in fuel management solutions.



Fuel Control System

HERE'S HOW THEY WORK

Drivers are greeted at the Fuel Island Terminal (FIT) with a message you program into the system. The driver inserts their magnetic-striped card or ChipKey®, or waves their proximity card/key, and enters the required PIN data (or other prompts you select). When the system authenticates the user's data and fuel type, the pump is activated and the vehicle can be fueled. Driver, vehicle, and transaction data are recorded in the system for later retrieval.

THE FUEL SITE CONTROLLER

At the heart of every Fuel Control System is the Fuel Site Controller (FSC). The Fuel Site Controller stores transaction data and driver and vehicle records, including fueling restriction data critical for proper fleet management. This can be kept indoors, away from the hazards of a 24-hour fueling island; or it can be built into the FIT as a self-contained system, for remote fuel sites without a building. The Fuel Site Controller can store thousands of proprietary cards and transactions, so even the largest operations have room to expand. Programming is done right from your PC, either locally or over phone lines using a modem, or via a LAN/WAN connection. Simple menu choices guide you through setup and daily operations.

TERMINAL FUELING GIVES YOU MORE CONTROL

With the multi-trucking feature, your drivers can use, at your own private fueling site, the very same commercial network cards they use on the road. Because network cards like TCH or WEX are accepted, there's no need to maintain a separate card base allowing transactions from your own site to be combined in the monthly network activity report.

THE RUGGED CHIPKEY® AND DURAKEY

The rugged, tamper-resistant ChipKey® or DuraKey are popular alternatives to cards. They fit easily onto your driver's key ring, so it's convenient and hard to lose. Every key contains a microchip that can be programmed and reprogrammed as many times as you like. Programming is simple and is done with an encoder connected to a PC. Change fuel type restrictions and quantity limits, mileage limits, validate or invalidate keys instantly. You can even flag vehicles for service and refuse fueling if service is not performed.

CHIPKEY® MILEAGE REASONABILITY ASSURES ACCURATE MILEAGE ENTRIES

Managers of multi-site operations are taking advantage of the odometer reasonability option. The K800™ Hybrid and C/OPT™ Systems record the current odometer number into the ChipKey®, which travels with the vehicle from point to point. At the next fueling, the odometer entry is compared against minimum and maximum ranges to ensure the accuracy of odometer entries.

DUAL CARD ACCOUNTABILITY AND CARDLESS/KEYLESS ACCESS

With dual card access, the driver and vehicle information is stored on two separate cards to track and report on drivers using multiple vehicles. Reports can be sorted by driver, vehicle or account (a combination of both). Driver PINs can be user-selectable during system set-up or generated by the Fuel Control System. Cardless access lets drivers fuel with a quick keypad entry. Any of these methods of access may be combined giving you greater flexibility and control to tailor a system that suits your operation.



FUELING SECURITY MEETS HOMELAND SECURITY WITH THE PROXIMITY CARD READER OPTION

Proximity card verification is the most secure and reliable form of driver or vehicle identification available today. Fueling access is either granted or denied when a cardholder waves their proximity card or key (containing an internal antenna) within a few inches of the proximity card reader

installed in a K800™ Hybrid or C/OPT™ Fuel Island Terminal. The proximity reader works with most HID compatible formats, so employees can use the same cards they already carry for building access.

FLEETLINK™ RFID FUELING

Automatically captures fueling data with the RFID fuel nozzle directly from your vehicle and eliminates the need for cards, keys or manual PIN number entries. See our Fleetlink™ data sheet for more information.

FSC3000™ AND FIT500™ Fuel Island Terminal

FSC3000™ FUEL SITE CONTROLLER BENEFITS

The heart of most Petro Vend Fuel Control Systems is the powerful new FSC3000™ Fuel Site Controller

- Remote installation provides greater security
- Downloadable software makes remote upgrades easy and inexpensive
- Wireless Petro-Net™ RS-485 twisted pair communication reduces installation costs
- Direct electronic pump control eliminates the need for third-party consoles and hose controllers
- Controls up to 32 mechanical/electronic dispensers per system
- Integral TCP/IP port allows connectivity for quick Programming and data retrieval
- Connects to OPW and many other tank gauges
- ARTWare™ Windows®-based configuration utility for easy system set-up
- USB key for transaction information backup
- Flexible installation options
- Can be integrated into three fuel island terminals



FSC3000™



FIT500™

Available with FSC3000™
Site Controller Inside



Electronic transaction
recording & card updates

FIT500™ FUEL ISLAND TERMINAL BENEFITS

- Stainless steel enclosure for years of maintenance-free operation
- Dual-head card reader
- High-speed, auto-loading, thermal receipt printer with graphics capability
- Impressive 10.4 inch (26.4 cm) graphics color display
- Add custom color graphics to your screen images with a simple USB memory key.
- Separate alpha, numeric, and function key pads are back lit for easy viewing at night
- Supports a multitude of commercial fueling cards, truck fleet cards and major bank cards
- System is field-upgradeable so you can easily add network interfaces remotely.
- Ideal for marine and ethanol fueling applications
- USB memory key for transaction backup/transfer and updating card files
- Optional dial-up or cell modem allows communication to remote locations
- Each FIT500™ can also be outfitted with 802.11 WiFi or Bluetooth® communication devices to facilitate updates and retrieval of transaction data

K800™ Hybrid and C/OPT Fuel Island Terminal



K800™ HYBRID FUEL ISLAND TERMINAL BENEFITS

- Ideal for private fleets needing a low cost fuel management solution.
- Interfaces with many fueling networks
- Each FSC3000™ can control up to 8 FITs with a maximum of 32 hoses per site
- Backlit LCD provides enhanced visibility in bright sunlight and at night
- Programmable prompts to guide drivers through the fueling process
- Durable metal keypad, 16-gauge steel enclosure and thermostatically-controlled heater for reliable operation in the harshest environments
- Downloadable software for easy system upgrades
- USB memory key for transaction backup/transfer and updating card files
- Optional dial-up or cell modem allows communication to remote locations
- Each K800™ Hybrid can also be outfitted with 802.11 WiFi or Bluetooth® communication devices to facilitate updates and retrieval of transaction data

C/OPT™ FUEL ISLAND TERMINAL BENEFITS

- Storage capacity for up to 64,000 cards and 2,000 transactions
- Graphics display guides users through the fueling process with pictures and text
- Accepts dual readers including, magnetic, optical, proximity and ChipKey® for maximum flexibility and reliability.
- Optional full alpha keypad allows entry of vehicle tags and other alpha information
- "Smart" weather shield automatically closes to protect card readers and receipt chute
- Fiber-optically lit keypads and LED backlit display for easy fueling at night
- Optional thermal receipt printer
- USB memory key for transaction backup/transfer and updating card files
- Optional dial-up or cell modem allows communication to remote locations
- Each C/OPT™ can also be outfitted with 802.11 WiFi or Bluetooth® communication devices to facilitate updates and retrieval of transaction data



K800 and AFC Fuel Control Systems

ADVANCED FUEL CONTROL SYSTEMS FOR SMALL TO MID-SIZE FLEET FUELING APPLICATIONS



K800 FUEL ISLAND TERMINAL BENEFITS

- Backlit LCD for visibility in bright sunlight or at night
- Programmable prompts to guide drivers through the fueling process
- Durable alloy keypad, 16 gauge steel enclosure and thermostatically controlled heater for reliable operation in the harshest environments
- High-impact plastic door overlay and powder coated enclosure and matching pedestal maintain their appearance for years to come
- Built in pulser power supply, pump control and pre-punched conduit access for easy installation



K800 FUEL SITE CONTROLLER BENEFITS

- Controls up to 4 Fuel Island Terminals and 16 hoses simultaneously to meet your needs today and tomorrow
- Up to 10,000 cards and 1,800 transactions can be stored in memory
- Odometer reasonability with ChipKey® assures accurate mileage entries
- One card, two card or cardless access
- Menu-driven programming with on-screen help for ease of use
- Serial communication ports for printer, PC and modem
- Can restrict fueling to time of day and fuel type
- Easily interfaces to personal computers

AFC - ADVANCED FUEL CONTROL SYSTEM BENEFITS

- Turnkey system is ideal for remote sites
- Durable stainless steel enclosure ensures years of maintenance-free service
- Accepts mag stripe cards, DuraKey or PIN entries for fuel access
- 10,000 card/key capability with up to 255 departments
- Can handle 16 different fuel types



Fuel Control System Features

FEATURE	AFC	K800	K800 HYBRID™	C/OPT™	FIT500™
Magnetic Card Reader	OPT	STD ¹	STD	STD	STD
DuraKey	STD				
Chipkey® Reader		STD ¹	OPT	OPT	
Proximity Card/Key Reader		OPT	OPT	OPT	
Dual Readers				OPT	
Text Display	STD	STD	STD	OPT	
Graphics Display				STD (5" B&W)	STD (10" Color)
User Definable Images					STD
Receipt Printer				OPT	OPT
Alphanumeric Entry		Single Key	Single Key	OPT	OPT
Wireless Communication		OPT	OPT	OPT	OPT
Enclosure and Pedestal	Stainless Steel	Painted Steel	Painted Steel	Painted Steel	Stainless Steel
Internal Fuel Site Controller	STD		OPT	OPT	OPT
Internal Pump Controller	STD	OPT (Up to 4 hoses/ FIT)	OPT (Up to 4 hoses/ FIT)	OPT (Up to 8 hoses/ FIT)	OPT (Up to 8 hoses/ FIT)

(Note some optional items are an extra cost) STD = standard equipment OPT = optional equipment

1 - Choose either Magnetic or Chipkey® Reader

CONNECTION OPTIONS

Petro Vend Fuel Control systems have numerous options for accessing your single site information or for communicating to multiple fueling locations. Using your ARTware or Phoenix software you can connect directly via RS232 serial connection by simply connecting your FSC3000 to your PC via the serial port, or to your network through the Ethernet port, by assigning it an IP address over your internal LAN/WAN. You can also access your FSC3000 and site information over regular phone lines with the internal dial-in-modem, as well as the additional connection options listed below.



USB KEY TWO-WAY DATA TRANSFER

Use the USB port on the back of the FSC3000 to record your transactions in a Phoenix-ready file format. When you are ready to poll, simply remove the USB key from the FSC, take it to the PC that is running Phoenix, and copy the file into the Phoenix\Data directory. With the optional USB Card Update feature, you can also copy your new/edited card data back to the USB key for updating the FSC with the new user information. Take one key back and forth for remote locations where no communication is available, or rotate them based on your operational needs.



EMBEDDED BLUETOOTH TECHNOLOGY

PetroVend now offers secure Bluetooth wireless communication between the FSC3000 site controller mounted in the Fuel Island Terminal and a Bluetooth enabled host PC. The Class 1, Bluetooth link, allows wireless data transfer for distances up to 320 feet (100 meters). With this added capability site operators can poll their transactions, update card files, or change their site configuration wirelessly, using Phoenix or ARTware. This feature facilitates the retrieval and updating of information at remote fuel sites where no direct line communication is available.



WIRELESS WiFi

Network enable your FSC3000. Communicate using standard 802.11b wireless communication over your local or wide area network (LAN/WAN). Compatible with standard inexpensive wireless routers, this option is also ideal for wet-fueling operations where the mobile-fueler is within range of your LAN/WAN.



IP TO CELL MODEM CONVERSION

With the IP-over-cellular-modem option, you can connect to your fueling sites anywhere there is cellular coverage. This option allows you direct access to your sites via the Internet using a secure software tunnel from any Internet access point.

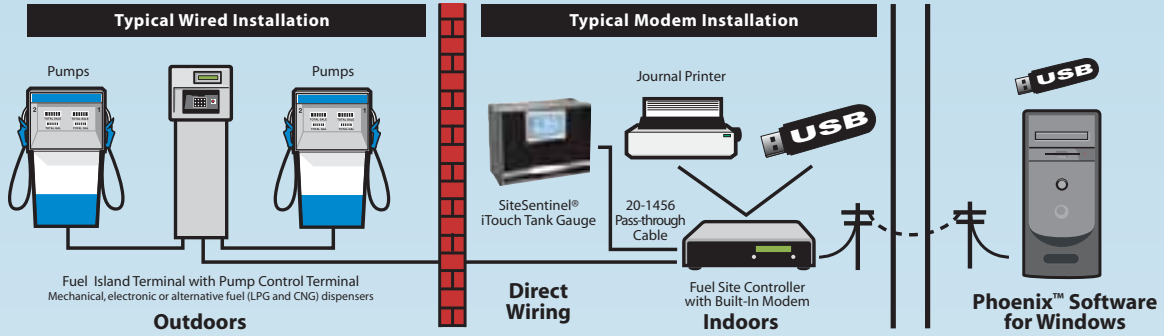


900 MHz WIRELESS COMMUNICATIONS

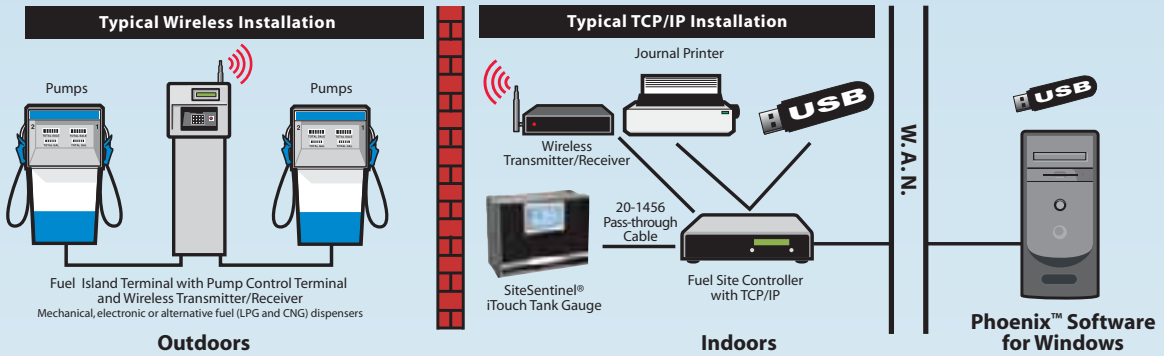
Petro Vend's 900MHZ wireless PetroNet communication option is a perfect data transmission alternative for sites where running communication conduit is cost prohibitive or not practical. Fuel Site Controller data is encrypted during transmission, and since wireless transmitters can send and receive data from thousands of feet away, you can install a wireless PetroNet network to avoid obstructions like roads, railroad tracks, water lines and utility right-of-ways.

Fuel Control System Connectivity Options

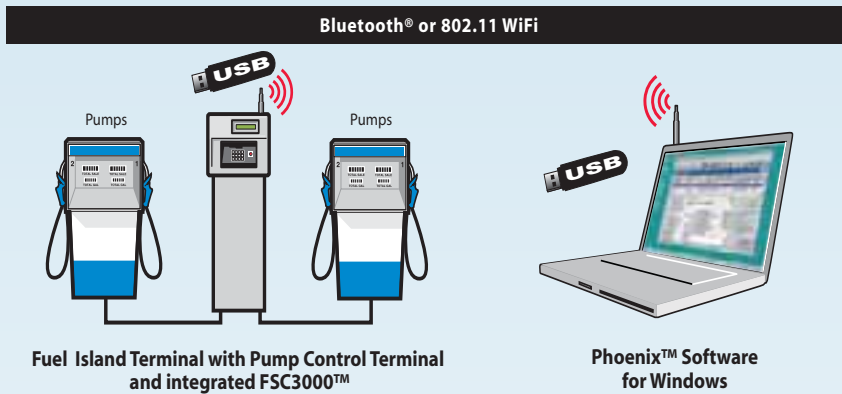
WIRED



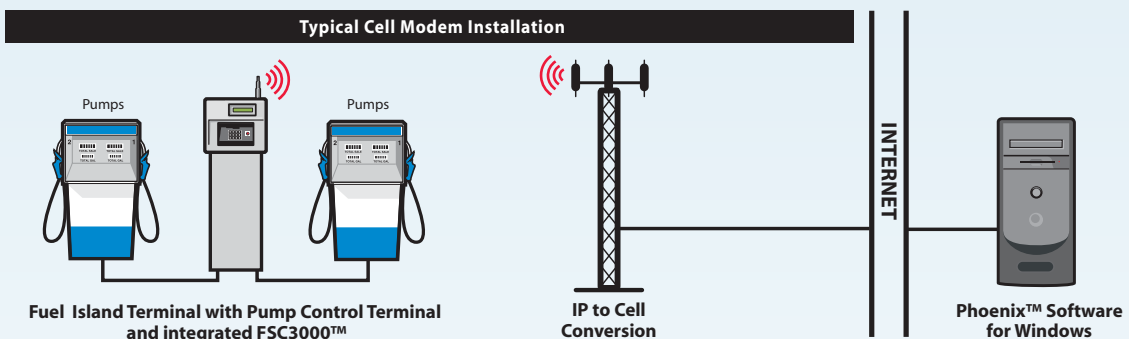
900MHZ WIRELESS PETRONET



LOCAL WIRELESS MODEM



LONG DISTANCE WIRELESS CELL MODEM

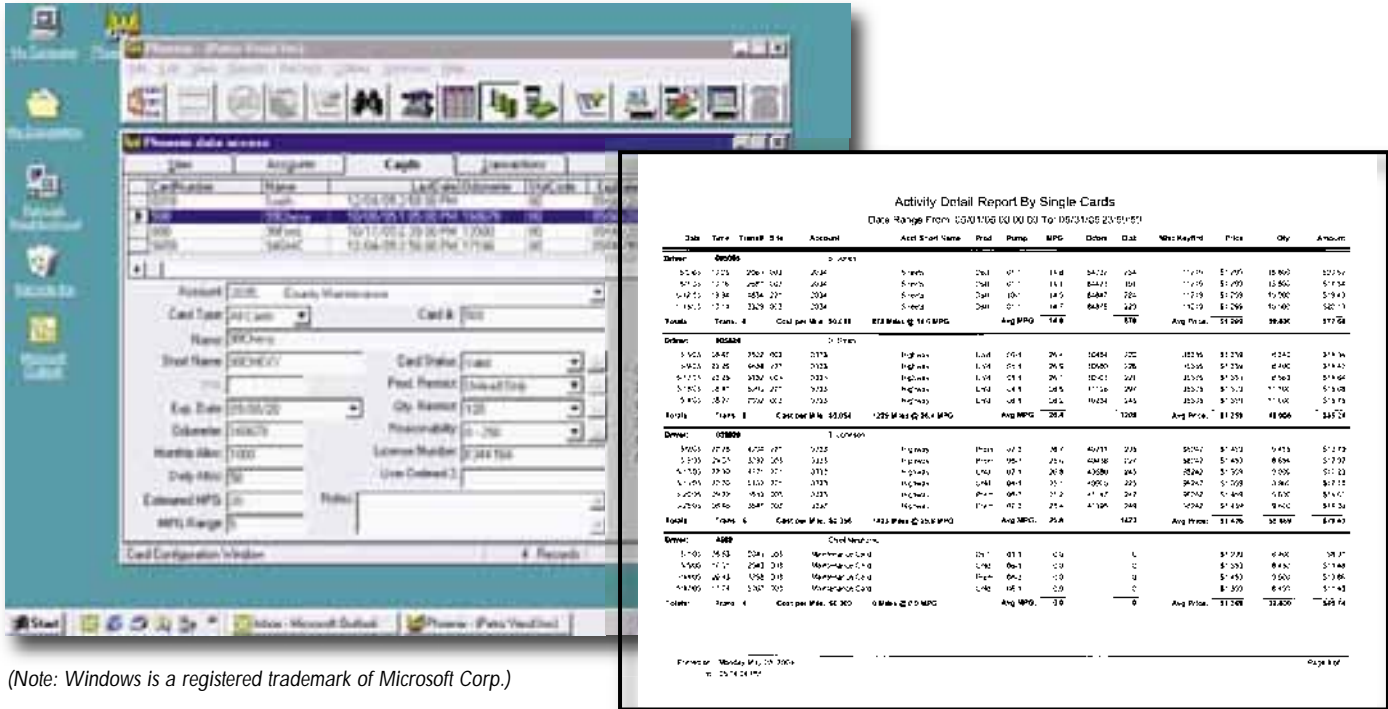


Advanced Management with Phoenix™ PC Software

PHOENIX™ PC SOFTWARE FOR ADVANCED MANAGEMENT

Phoenix™ Plus and **Phoenix™ Premier** are powerful fuel management software packages for your Windows®-compatible PC. The intuitive user interface lets you easily navigate between site, account, card and transaction screens. **Phoenix™ Plus** features back-up and restore, terminal emulation and on-demand transaction polling. It is also a powerful data management and communications software package that gives

you total, centralized control over your fueling operations. **Phoenix™ Premier** offers complete site reconciliation by incorporating additional site data from your OPW tank gauge or other brand of tank gauge (see the **Phoenix™ Premier** sales literature for details). Most data can be exported to third-party database, spreadsheet and fleet maintenance programs for further processing.



(Note: Windows is a registered trademark of Microsoft Corp.)

Phoenix™ Plus includes a new Autopoll Scheduler that lets you schedule activities to be automatically performed daily, weekly or monthly. These activities include: capturing transaction data, printing reports, exporting transaction data files and backing up or updating card records. There's also a built-in help feature to assist you with each option. You can store address, phone number, tank, site employee and fuel provider information for each site.

- **Exporting Transaction Data** Phoenix™ even lets you export your transactions in Excel 5.0, HTML, dBASE IV, FoxPro 2.5, Lotus 1-2-3 WK3, Paradox 4.x and two ASCII formats: CSV (comma separated variable width) and SDF (space delimited fixed width).

- **Card Management**

This feature lets you make changes to your card database in one central location for multiple sites. Fuel sites are then automatically updated during routine polling. Additional card management tools include data entry defaults and reassigning cards to new accounts.

- **Reporting**

Phoenix™ allows you to choose from over 60 different types of reports. They include: Account, Card 1 and Card 2 Master File Listing, Site Sales, Product Sales, Account Sales, Transaction and Pump Total reports.

Phoenix™ also allows you to consolidate data from multiple sites and customize the report menus to just show the reports you use.

- **Enhanced Odometer Checking**

This feature lets you easily find obvious, incorrect mileage entries such as single, sequential or repeated numbers. You can define an average MPG with a tolerance for each card, which is then used to verify the amount fueled against the odometer entry.

Using the enhanced odometer checking tools allow you to fix entry errors before running reports or exporting data to your fleet maintenance software program

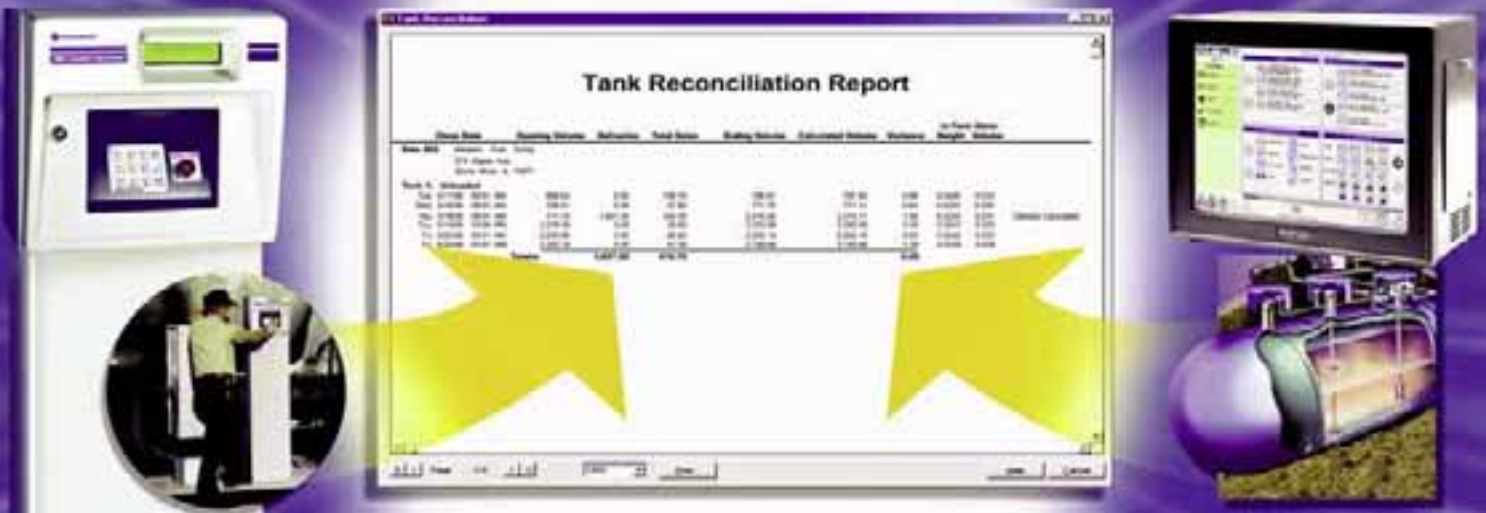
Phoenix™ Premier For Fuel Reconciliation

COMPLETE SITE RECONCILIATION IN ONE POWERFUL SOFTWARE PACKAGE

Phoenix™ Premier Fuel Management Software with tank gauge interface automatically polls the FSC3000™ for site, account, card, and transaction data, and your OPW Tank Gauge (or other brands of automatic tank gauges) for fuel inventory delivery information allowing you to reconcile your site's fueling activities. Polling is possible through a single phone line and one phone call with the use of an appropriate switch box or pass-through port on your fuel site controller. LAN/WAN connection is also available. **Phoenix™ Premier** is also ideal for owners of multiple fuel sites who want to integrate the management of all their facilities into one centralized computer.

Based on OPW Fuel Management Systems' **Phoenix™ Plus** software package, Phoenix™ Premier includes full-featured back-up and restore, automatic and on-demand transaction polling, card management, and over 60 reports.

Phoenix™ Premier's intuitive user interface runs on your Windows® PC, and is compatible with Windows XP® and Vista®. With Phoenix™ Premier, checking and reconciling your fuel inventory is as easy as clicking a mouse.



Features

- Communicate with OPW Tank Gauges and many other tank gauges
- Connect to fuel control systems and tank gauges via direct serial, phone line, or LAN/WAN
- Program tanks for each product and map them to the dispensers
- Supports connecting to the tank gauge via the FSC3000™ pass-through port or a switch device, eliminating the need for two separate lines and modems
- Collect inventory information at the same time each day (automatically, using the Autopoll Scheduler), or on demand
- Collect and store any saved delivery events from the tank gauge
- Inventory and delivery information for each site can be viewed on the screen or reports may be printed
- The Reconciliation Report provides a comparison of sales data from the fuel control system to the inventory/delivery data from the tank gauge
- Use the Reconciliation Report to quickly spot any over/short problems or trends
- Consolidate data from all sites in a single PC application

LEADING THE WAY IN TANK GAUGE INNOVATION

**OPW FMS Now Offers Two New Tank Gauges
to Make Monitoring More Accurate
and Easier Than Ever.**

SiteSentinel® iSite™ – Intuitive, 15-inch (38 cm) color touch-screen console is one of many features that brings simplicity to managing inventory on ASTs up to 50 feet (15 m) in height and for your regular UST fueling sites.



SiteSentinel® iTouch – With the touch screen graphics display, SiteConnect™ Software the SiteSentinel® iTouch is one of the easiest tank gauges to set up and use.



Flex Probe



VSmart Module



924 Probe



Sensor

OPW 
FUEL MANAGEMENT SYSTEMS

ONE COMPANY. ONE WORLD. ONE SOURCE.

6900 SANTA FE DRIVE • HODGKINS, IL USA 60525 • www.opwfms.com • 708-485-4200 • (fax) 708-485-4630

NOTE: All information subject to engineering and/or other changes. All trade names are copyrighted. Patents Pending. ©2008 OPW Fuel Management Systems
©2008 Delaware Capital Formation, Inc. All Rights Reserved. DOVER and the DOVER logo are registered trademarks of Delaware Capital Formation, Inc., a wholly-owned subsidiary of Dover Corporation