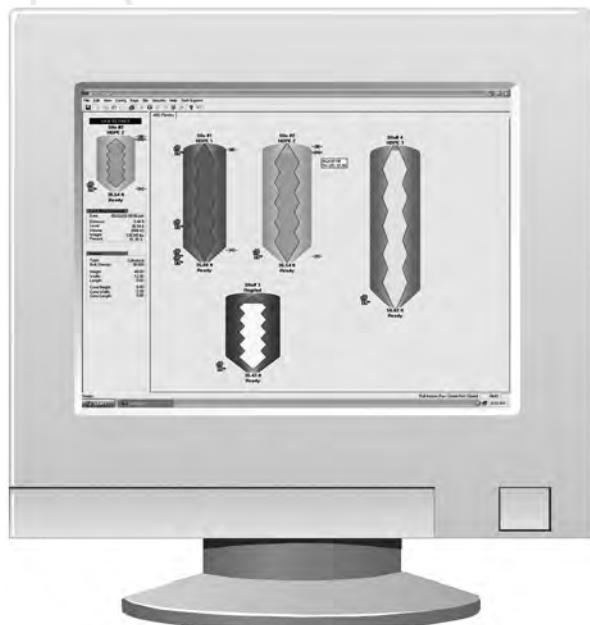




*"Setting The Standard For Supplier Excellence"*



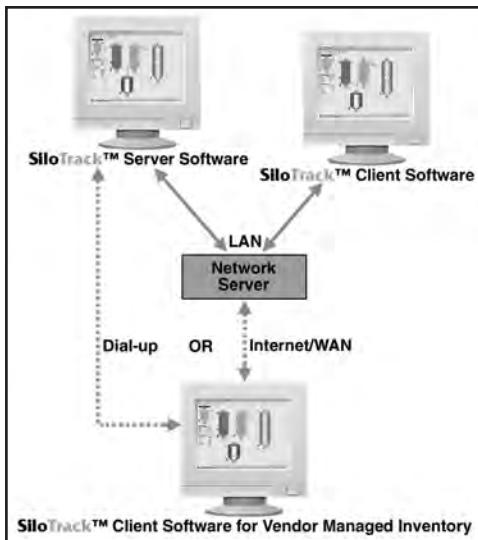
## SiloPatrol®

**SiloTrack™ Inventory Management  
Software Version 3.5**

- ▼ Interface With Multiple Sensor Technologies
- ▼ Simple Local And Remote User Access
- ▼ Vendor/Remote Managed Inventory Solution
- ▼ Bilingual – English/Spanish
- ▼ Standard Advanced Features



- ▼ **Sensor Interface For Flexar™ Guided Wave Radar And SiloPatrol® If Smart Cable-Based Sensors Provides Flexibility And Ensures Performance**
- ▼ **Simple English/Spanish Language Switching**
- ▼ **Immediate Access To Important Data Via Network Ready Server/Client System Via LAN, WAN/Internet And Dial-Up**
- ▼ **Unique Set-Up Wizard And Intuitive Operation Simplifies Use And Operation**
- ▼ **SiloTrack™ System Security Will Satisfy Your IT Department**
- ▼ **Monitor Up To 128 Sensors And Display Distance, Level, Volume, Weight, %, As Well As Alarm, Relay And Sensor Status**
- ▼ **Advanced Features Including Multiple Sensors Per Vessel, Auto Report Generation & Transmission, Custom Curve-Fit Weight Table, Export Capabilities And Auxiliary Outputs**



Example configuration of a **SiloTrack™** system with a LAN and remote users.

**SiloTrack™** Inventory Management Software Version 3.5 is the next evolution of Monitor's popular PC-based application software that provides users with an unsurpassed, flexible graphical interface for our industry-standard **SiloPatrol® If** Model SMU inventory monitoring sensors and our **Flexar™** guided wave radar continuous level measurement sensors. Refer to bulletin 343A and 353A for more information.

**SiloTrack** software includes a Server and Client version. Together **SiloTrack** Server and Client provide inventory monitoring and management capability to a virtually unlimited number of users. Users can be internal and external to your facility, allowing you to easily implement remote inventory monitoring and vendor managed inventory.

The **SiloTrack** Server software is the master operator interface for our **SiloPatrol If** and **Flexar** "smart" sensors. This software is installed on the PC in which the RS-485 communication sensor network(s) will be connected. All application setup and configuration is done with the Server software.

The **SiloTrack** Client software provides remote users access to the inventory monitoring system and can be installed on PC's that can interface with the **SiloTrack** Server PC via LAN, WAN/Internet or Dial-up modem. Security is established in the **SiloTrack** Server software. The type and method of connection is established in the **SiloTrack** Client software. The **SiloTrack** Server software allows you to establish security for access by any Client user.

Auxiliary Output Enclosures (AOE) and Remote Display Units (RDU) can be added to make any **SiloTrack** system a true management and control system (RDU's can not be used with **Flexar** level sensors). Relay action and analog outputs are easily setup in the **SiloTrack** Server software.



## SOFTWARE DISPLAYS/CAPABILITY

### SIMPLE START-UP AND OPERATION

**SiloTrack™** software, like other Windows® based programs, offers simple and intuitive operation. There are multiple ways to access and change setup parameters, or perform system functions. You can activate functions from the drop down lists of the Menu Bar topics, or by left-clicking the mouse on the Tool Bar icons.

It is very easy to build vessel graphics using the unique Setup Wizard in the Server software. **SiloTrack** also includes a self-explanatory tab structure system, which makes it simple to configure alarms and relays, select sensors, select units of measurement, etc. The Setup Wizard in the Client software makes it simple to connect to the Server PC, subscribe to silos, and receive measurement updates.

With no prior experience, and with minimal help from the Installation & Operation manual that comes with the software, you should become comfortable with the operation of **SiloTrack** within 30 to 60 minutes – it's that simple.



### LANGUAGE

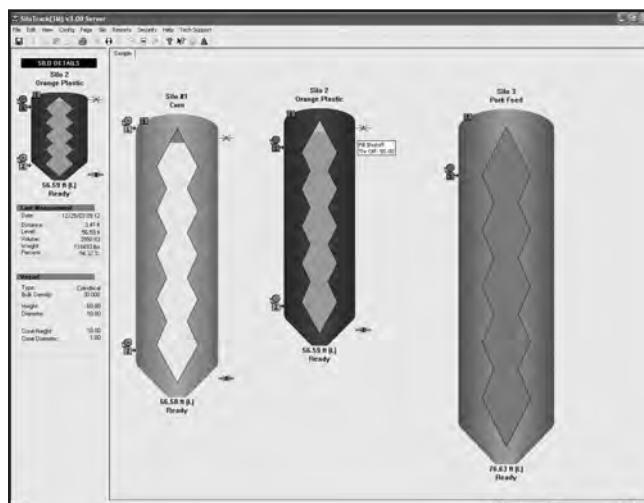
**SiloTrack™** Server and Client software incorporate both English and Spanish languages. The primary dis-

play and configuration text is English. Conversion to Spanish is easily accomplished. (All help files are only in English).



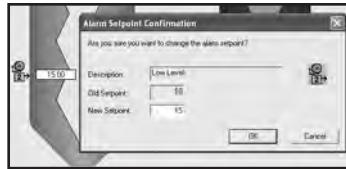
### MAIN DISPLAY

The main display screen for the **SiloTrack™** Server and Client software allows the operator or user to graphically view the last status condition of each silo and its material contents. Using your PC's mouse you can highlight a silo (left click on the image) and display the detailed information for the selected silo in the Silo Details screen (left panel in main display as shown below).



**SiloTrack** has the ability to have up to five sensors per vessel. Very large vessels, or vessels that may have multiple inlet and/or discharge points, may require more than one sensor for higher precision in the distance measurement. The total distance measured by all sensors is divided by the number of sensors to derive the average distance to the material in the silo. The distance measurement can then be used to calculate the level, volume and weight of material. Measurement units can be selected from a wide variety of English or Metric units. Sensor status condition and diagnostic messages are displayed for each silo ("Ready"; or a specific error message will be shown in red).

Up to four alarms can be established for each silo and can be individually named and set to activate as a high or low level alarm, sensor error or material reorder alarm. Changing alarm or relay set points is easy. Just "click and drag" alarm and relay indicators to change their respective set points. It's that simple.



Each alarm can be set so that specific actions are taken when alarm conditions exist. Alarm notifications can be sent to:

- ▼ Up to two e-mail addresses (or text messages to cell phones)
- ▼ Up to two fax numbers
- ▼ Up to two pager numbers

The material reorder alarm is a low level alarm that can provide notification to a selected vendor that this specific silo is in a reorder condition thereby informing your vendor to take action based upon your pre-arranged instructions.

The number of silos that can be setup and displayed on a single page is limited by the size of each silo and the arrangement that you create. You can size and locate vessel graphics using the "click and drag" function with your mouse. Multiple pages can be used to organize your graphics by material type, location or any other logical method you might want to use.

The easy-to-use Menu Bar at the top of the main display allows you to quickly setup the software for your specific application. In addition, the "Tech Support" menu button can be used to link to the Monitor website, view Installation & Operation documents or to chat with a technical support specialist if the PC is connected to the Internet.

Convenient Tool Bar buttons (including the button for the Set-Up Wizard) are provided just below the Menu Bar. These buttons will allow you to quickly initiate common Windows® commands plus make a manual measurement for a single silo or all silos. You can also view the selected silo history graph and silo properties. **SiloTrack** Inventory Management Software is

truly the easiest to use and the most flexible and capable operator-interface of its kind.

### SILO SETUP

While you can use our unique **SiloTrack™** Setup Wizard as previously mentioned, silo graphics can also be established by left-clicking on the "Add Silo" Tool Bar button or by entering the "Silo" menu and clicking on the menu item "Add" (shown at right). This will automatically place a silo graphic on the main display screen. All the information about the silo can then be easily entered in the "Properties" window, which is accessed under the "Silo" menu or via the convenient silo properties button.



The silo setup in the "properties" window includes, Sensor Selection and Address, Silo Name and Material Contents, Display Default, Measurement Method (manual, auto or auto/manual), Automatic Measurement Settings, Measurement Units (English and Metric), Silo Type, Dimensions and Material Bulk Density, Curve-Fit Weight Data Table Setup (if used), Alarm 1, 2, 3 and 4 Setup, % Display, Analog (one per sensor) and/or Relay outputs (up to four per sensor), Material and Empty Space colors, and External Silo colors for 3-D image

### VOLUME/WEIGHT CALCULATIONS

Material volume and weight can be calculated and displayed if desired. **SiloTrack™** Inventory Management Software offers you the ability to display volume/weight calculations based upon either geometric calculation using the silo type, dimensions and bulk density information you have entered, or based upon the data you enter in the Curve Fit Weight Table. The weight table allows you to enter up to 100 data pairs, each consisting of a distance measurement and a corresponding weight value. Actual distance measurements between data points will result in a weight value displayed based upon a standard curve fitting equation. The Curve Fit Weight

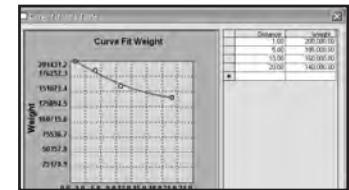


Table is a tool you can utilize if you wish to improve the precision of the weight calculation.

DATA REPORT GENERATION / EXPORTING

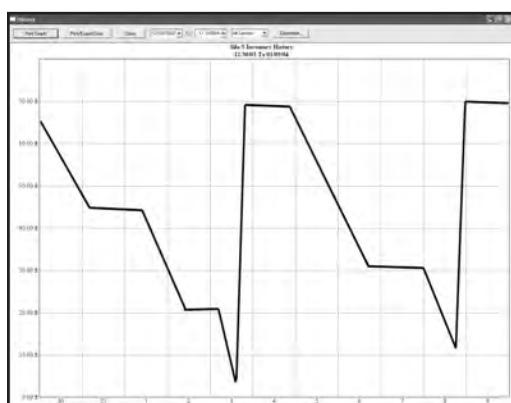
SiloTrack Inventory

**Check Inventory Management Software can generate standard reports for Measurements (silo history, silo last measurement, page summary and all summary)**

and Sensor Diagnostics (Server software only), which can be scheduled for transmission via email or fax automatically. This feature can be used to notify material suppliers of a replenishment need or to provide management with necessary information reports automatically at scheduled times or intervals.

Each user can export silo history data or alarm data into any one of several available formats. This allows you to save data files for further manipulation and analysis.

In addition, the silo history or alarm data can be viewed in chart form. A selected date range is entered and the silo measurement data (display default) is charted. The history data chart can be printed and the data tabulated in a report and exported and printed.



## REMOTE INVENTORY MONITORING

The **SiloTrack** Inventory Monitoring Client Software can be setup to access silo data from one or multiple **SiloTrack** Server locations via direct dial-up, LAN or Internet/WAN connections. This allows remote location applications to be implemented including vendor

managed inventory, remote corporate access, and bulk transport monitoring and scheduling. This improves communication and can eliminate downtime and out-of-material conditions. The Set-Up Wizard in the Client software can be used to create new pages, set-up communications with the Server PC, set-up password security, determine how to receive measurement updates, and select the desired silos to monitor.

In addition, alarm alerts can automatically notify remote users or suppliers of material level via email and fax. Reports can also be automatically generated and sent.

## REMOTE ACCESS SYSTEM SECURITY

Access to the **SiloTrack™** Server software database is controlled by establishing a unique user name and password for each Client. A virtually unlimited number of individual Client/users can be established. User groups can also be setup.

Each client can be restricted to have access to a limited subset of the total number of silos connected to the **SiloTrack** Server system. Each Client can also be restricted to “read-only” or can be allowed to manually initiate measurements.

For LAN/WAN/Internet applications, when requesting an update or adding silos to the Client software, the Client is required to identify the name or IP address of the PC which contains the **SiloTrack** Server software and transmit that address along with the client's unique user name and password.

For dial-up remote monitoring connections additional security can be enabled by selecting the dial-back option. This selection in the Server software requires entry of a phone number that the **SiloTrack** Server software machine will call in response to the dial-up request. This provides added security to ensure that only the target remote user will receive the update.

Communication between Client and Server software is further protected by a 56-bit encryption algorithm.

## USE OF VOLUME/WEIGHT CALCULATIONS

The **SiloPatrol®** SE Model SMU and **Flexar™** guided wave radar sensors make a direct measurement of the distance between the sensor and the material surface. This equipment does not measure the volume or weight of the material within the vessel. The **SiloTrack™** software can perform calculations to display the volume and weight of the material. Volume calculations are based upon the distance measurement and the vessel dimensions entered by the user during set-up. Weight calculations can be based upon the distance measurement, the vessel dimensions and material bulk density. Alternatively, weight calculations can be based upon the distance measurement and a Curve Fit Weight Table described previously. The distance measurement when material level is in the cone of the silo, is limited by the cable travel being stopped by contact with the material, contact with the

empty cone section or the mechanical limit as determined by the length of cable supplied with the Model SMU sensor. **SiloTrack™** Server software will provide the user notice of this condition when a distance measurement is made into the cone as determined by the vessel dimensions as entered by the user during setup.

NOTE: The calculated volume and weight values should be considered "estimates". Monitor Technologies LLC accepts no responsibility for the accuracy of the calculated and displayed volume and weight values. The accuracy (not stated or warranted) of the volume/weight calculations are effected by the fluctuation and accuracy of various factors. These factors include, but may not be limited to, actual vessel dimensions, sensor mounting location, angle of repose (negative and positive), material bulk density, material flow properties (ratholes, bridging, etc.), material inlet/discharge locations, and material packing. Please consult the factory to discuss applications where volume/weight is of critical importance.

## ORDERING INFORMATION

### Server Software<sup>6</sup>

6 - 8 9 X - 3 X

#### QUANTITY OF SENSORS

- 1 = Up to 16 sensors (uses PC Com port)<sup>1</sup>
- 2 = Up to 32 sensors (supplied w/ PCI Comm card)<sup>2</sup>
- 4 = Up to 64 sensors (supplied w/ PCI Comm card)<sup>3</sup>
- 6 = Up to 96 sensors (supplied w/ 2 PCI Comm cards)<sup>4</sup>
- 8 = Up to 128 sensors (supplied w/ 2 PCI Comm cards)<sup>5</sup>

#### COMPUTER

- 1 = NO PC (Customer Supplied)
- 2 = With PC

#### LANGUAGE

- 1 = English/Spanish

### Client Software<sup>6,8</sup>

6 - 8 9 9 0 - 3 X

#### LANGUAGE

- 1 = English/Spanish



## **ACCESSORIES**

- |        |  |
|--------|--|
| 6-5126 | <b>SiloTrack™</b> Server Software-Upgrade <sup>7</sup> |
| 6-5127 | <b>SiloTrack™</b> Client Software-Upgrade <sup>7</sup> |
| 6-8001 | RS-232 to RS-485 Converter Kit                         |

## **REPLACEMENT PARTS**

- 6-1982 2-port communications card for standard or slimline PCs. Includes card, driver software on CD, mounting brackets and DB9 connectors.

### **NOTES:**

- 1 RS-232 to RS-485 converter required for connection of PC to sensor network (See Accessories). One open serial COM port is required in the PC.
- 2 Software comes with one PCI type communication card with two (2) RS-485 networks. One open PCI expansion slot is required in the PC.
- 3 Software comes with one PCI type communication card with four (4) RS-485 networks. One open PCI expansion slot is required in the PC.
- 4 Software comes with two PCI type communication cards with a total of six (6) RS-485 networks. Two open PCI expansion slots are required in the PC.

- 5 Software comes with two PCI type communication cards each with four (4) RS-485 networks. Two open PCI expansion slots are required in the PC.
- 6 Only one Client software package is required per customer site as it can be installed on a virtually unlimited number of PCs.
- 7 This upgrade is for existing **SiloTrack™** users. The previous version must be uninstalled before installing Version 3.5. Version 2.0 or 1.0 data and setup will not be retained.
- 8 V3.5 is required for use with **Flexar™** guided wave radar sensors. **Flexar** and **SiloPatrol** sensors must be installed on separate networks if both are used in the same system.

## **PC RECOMMENDED REQUIREMENTS**

<b>Processor:</b>	Pentium® IV
<b>Bus:</b>	PCI Slots for RS-485 Communication Card(s)(One Available Slot Required for up to 64 SMUs/Two Available Slots Required for 65 to 128 SMUs) OR Serial Port used in conjunction with an RS-485 Converter
<b>System Memory:</b>	1 GB
<b>Video:</b>	SVGA with 4MB Video Memory
<b>Hard Drive:</b>	20GB with 650MB of Available Space
<b>Operating System:</b>	NT 4.0, 2000, ME OR XP (Consult factory for other operating systems)
<b>Required Software:</b>	Internet Explorer® 4.0, Service Pack 4 for Windows® NT 4.0 or Greater
<b>Required Hardware:</b>	CD-ROM Drive, 56K Modem, Soundboard and Speakers (May be integrated on CPU board) Local Area Network if Multi-User on LAN or WAN, Internet connection (full time for remote multi-user)
<b>Highly Recommended:</b>	UPS with AC Line Surge Suppression and Telephone Line Transient Suppression

## **WARRANTY**

Monitor Technologies LLC warrants the licensed software media to be free from defects in workmanship and materials. For a period of ninety (90) days from the date of installation Monitor Technologies LLC will replace the software media without charge if determined to be defective. The Purchaser must give notice of any defect to Monitor Technologies LLC within the warranty period, return the software product intact and prepay transportation charges. The obligation of Monitor Technologies LLC under this warranty is limited to the replacement of the software media. This warranty shall not apply to any product that is repaired or altered outside of Monitor Technologies LLC factory, or which has been subject to misuse, negligence, accident or incorrect installation. Monitor Technologies LLC reserves the right to change the design and/or specifications without prior notice.





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