















**Sentry Utility
NJEX/ZEO Odorant System
Software Operators Manual**

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How to Use this Manual

The Sentry Utility Manual is a step-by-step guide containing the procedures needed to use a PC to work with the NJEX odorant System.

The NJEX Odorant Injection Systems are designed specifically to meet customer's global odorization needs. It is recommended that the technicians working with Sentry Utility study the manual prior to initiating work on the system for the first time.

Typographic Conventions

To aide in readability, this manual uses several typographic conventions. Digital versions of the manual, available PDF format, will be highlighted in blue underlined text indicating the copy retains a hyperlink to the referenced item.

Getting Help

This manual provides solutions to typical questions about the use of Sentry Utility software. If the answer cannot be found within this manual, contact YZ Systems at:

T: 1-281-362-6500

T: 1-800-NJEXHELP

E-mail: techsupport@yzsystems.com

When calling, have this manual close at hand as a visual aid for customer service. Whether calling or writing, please include the following information:

- The serial number of the NJEX System and the version of this manual. The serial number is located on the inside of the enclosure door. The version (date) of this manual is located at the bottom of each page.
- A description of the problem and, if applicable the actions of the technical personnel when the problem occurred.

Features

The NJEX Sentry Utility gives you access to critical historical information on your odorizer.

The Sentry Utility System is a paperless audit trail and data capturing system.

- Powerful easy to use Windows-based design
- Online user manual access
- Allows quick configuration of NJEX instruments
- Provides powerful tools for analyzing and reporting NJEX data
- Export data to formats accepted by most spreadsheet and database programs
- Graphing capability allows quick evaluation of odorant level trends (N-300 only)

Features include:

- detailed event log
- gas odorant usage (DOU/HOU)
- LPG odorant usage (LOU)
- definable injection rate performance
- data analysis, documentation and audit trail
- remote communications capabilities
 - Online remote control of system functions (N-300 only)
 - Online remote system monitoring (N-300 only)

File Structure:

There are five basic types of files that will be established and used within the Sentry Utility System:

- **MOD files:** used for temporary or long term event log storage
- **LOG files:** contains the collective event logs for each N-300 system
- **RPT files:** contains the permanent historical records of each N-300 LOG file
- **TXT files:** export any file into a .txt file to open in other programs
- **PRM files:** stores parameter files for repeat use in configuring N-300 systems.

System Requirements

The following system requirements must be met or exceeded in order to insure proper operation of the Sentry Utility Software:

Minimum Computer System Requirements:

Windows XP or newer
1 – USB port (for USB-MM adapter)

Recommended Computer System Configuration:

Windows 10 OS
1 – USB port (for USB-MM adapter)

Minimum NJEX Odorization System Hardware Requirements:

NJEX- 6300, 7300, or 8300 (300 series controller)
ZEO - 6400, 7400, 8400 or 9400 (400 series controller*)
1 - Sentry Monitor Module model #MM-300 or MM-400 depending on controller

* Some functions illustrated in this manual will not be available in conjunction with data collected from an N-400 controller and memory module.

Sentry Products Available from YZ Systems:

Part Number	Description
F4-0103*	Sentry Utility MM-300 and MM-400 Download Cable

*Must have this download cable to work with Sentry Utility, other cables aren't compatible

The Audit Trail

The Sentry Utility Monitoring System provides a platform for maintaining a complete and accurate gas odorization audit trail. The odorization system operator gets all the important system performance events such as: system start/stops, odorant usage (Gas-DOU/LOU), or odorant usage (LPG-LOU), system parameters, and system alarms. With this information the operator can track and verify an odorization system's infield performance.

System Components Overview

The system incorporates three main devices:

[Sentry Utility Software](#)

[Memory Module](#)

[NJEX Controller](#)

Sentry Utility Software

The Sentry Utility program software acts as the hub of some companies' odorization programs. The Sentry Utility software supplies the main user interface between each odorization unit and the system operator.

The Sentry Utility program resides in a PC and supplies the "eyes and ears" of the monitoring system. The software has two methods of downloading information from an odorization unit (via on site monitor module download, or via a remote monitor module download (N-300 only) by modem/IP address (*N-300 ONLY*), or RS-485 link (*N-300 ONLY*) and displays it to the system operator. The operator can then use the software data management features to further evaluate the system's performance. The operator is creating a complete and permanent audit trail of the system's performance.

Memory Module

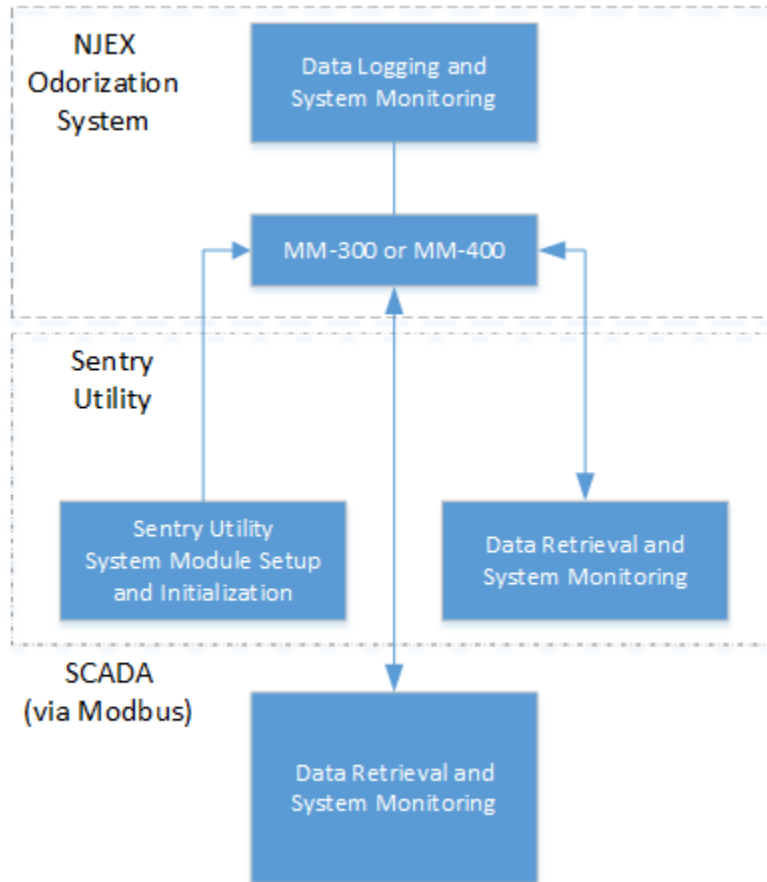
The Monitor Module provides the means of transporting information between the odorization system and the Sentry Utility software. The module is mounted in the odorization system controller and records up to 120 days of data (90 days recommended) for the MM-300 and 12 months of data for the MM-400.

NJEX Controller

The NJEX electronic controller houses the electronic control center for the odorization system. The controller administers all system operations and reports the results to the monitor module. All communication and operations between the controller and module are totally transparent to the system operator. The only exception is when the controller checks for a valid module configuration. This test occurs continually and verification of communication is displayed via an indicator block as shown in the illustration at the left. If this indicator is not present no communication between the N-300/N-400 and the module is occurring, and therefore the module cannot record any data.

Basic System Concepts

The Sentry Utility Monitoring System is designed for one primary purpose...to be the most efficient and cost effective manner of bringing proven odorization information from the field to the office.



This concept centers around three or four major devices: the NJEX odorization system, the Memory Module, the Sentry Utility software, and an option of a SCADA interface. The main workload of the Sentry Utility system is taken care of by the Sentry Utility Software and the NJEX odorization system. The Monitor Module serves as a vehicle to transport information between the two other devices. The relationship between these devices is displayed in the following illustration.

This illustration shows a simple working diagram of a Sentry Utility monitoring system. The system is comprised of these primary systems:

- Sentry Utility System Setup (Monitor Module Initialization)
- Data Logging and NJEX Odorization System Monitoring
- Data Retrieval and Data Management
 - via Sentry Utility Software
 - via MODBUS

Sentry Utility - NJEX Odorant System Software

Note that the System Setup and Data Management steps are done in the Sentry Utility software. This illustrates the two main purposes of the Sentry Utility software. The Data Logging step is controlled in the NJEX Odorization System.

The Sentry Utility System setup configures the module for recording data in the odorization system. This step initializes a module for use in a specific odorization unit. Afterward, the module is placed in the odorization unit to record system performance.

The data logging and system monitoring functions are the only part of the diagram that involves the odorization system. This section involves the raw data collection from the odorization unit. The module is placed into the odorization unit to record the system's performance. After 90 days (12 months for MM-400), or sooner, the module can be retrieved and the odorization data removed. This data will contain all the system performance events needed to evaluate the unit and create an audit trail.

The data retrieval aspect of the Sentry Utility program downloads accumulated data from the module. All the data retrieval and data management functions are contained in this portion of the Sentry Utility program. The retrieved records can then be used by the system operator for odorization system evaluation. The operator then will clear the module's memory and returns the cleared module to the unit for more data recording. The data retrieval and data management sections are primarily used for odorization unit troubleshooting and audit trail records.

Operating the Basic Sentry Utility Monitoring System

Operating the basic Sentry Utility monitoring system is simple. The basics are in understanding the three steps to operating the Sentry Utility System. These steps are illustrated in the [Basic System Concepts](#) section.

System Registration

This Sentry Utility Software is covered by an end user license agreement (EULA) that governs the use of the software package. Please read the licensing agreement prior to installing and using the Sentry Utility Software.

Installation

Prepare to install Up Sentry Utility On Your Computer:

The following items are needed when the Sentry Utility Program operates on a typical PC or Laptop:

- A computer meeting the minimum hardware requirements as listed in the [System Requirements](#) section
- A Sentry Utility modem connection (MM-300 ONLY) and/or a Sentry Utility download cable.
- One or more Memory Modules per NJEX odorization system

Installing the Sentry Utility Program:

The following steps should be taken to install the Sentry Utility software:

1. Open the Sentry Installer.exe file to install Sentry Utility
2. Read the Licensing Agreement and Click OK to continue.
 - Note: Clicking OK indicates that you agree to the licensing agreement.
3. Follow the on screen instructions to complete the installation.
4. The install program will automatically create the five data subfolders required by the Sentry Utility program. These five data subfolders are as follows:
 - **MOD files:** used for temporary or long term event log storage
 - **LOG files:** contains the collective event logs for each N-300 system
 - **RPT files:** contains the permanent historical records of each N-300 LOG file
 - **TXT files:** export any file into a .txt file to open in other programs
 - **PRM files:** stores parameter files for repeat use in configuring N-300 systems.
 - NOTE: The names of the data subdirectories should not be changed.
5. The Sentry Utility software installation is now complete. Refer to the next section, [Running Sentry Utility](#), to start the Sentry Utility program. Then refer to the "Setting up the Sentry Utility Program" section to configure the Sentry Utility program to your PC.

After Installing the Sentry Utility Program:

As a result of the installation process, a Sentry Utility shortcut icon was added to the Desktop and a Start menu program list was also created.



If needed, the Sentry Utility program can be uninstalled using Add/Remove Programs function found in the Control Panel.

If you're using the OLD USB download cable then you must use the Sentry4 v1.12 software

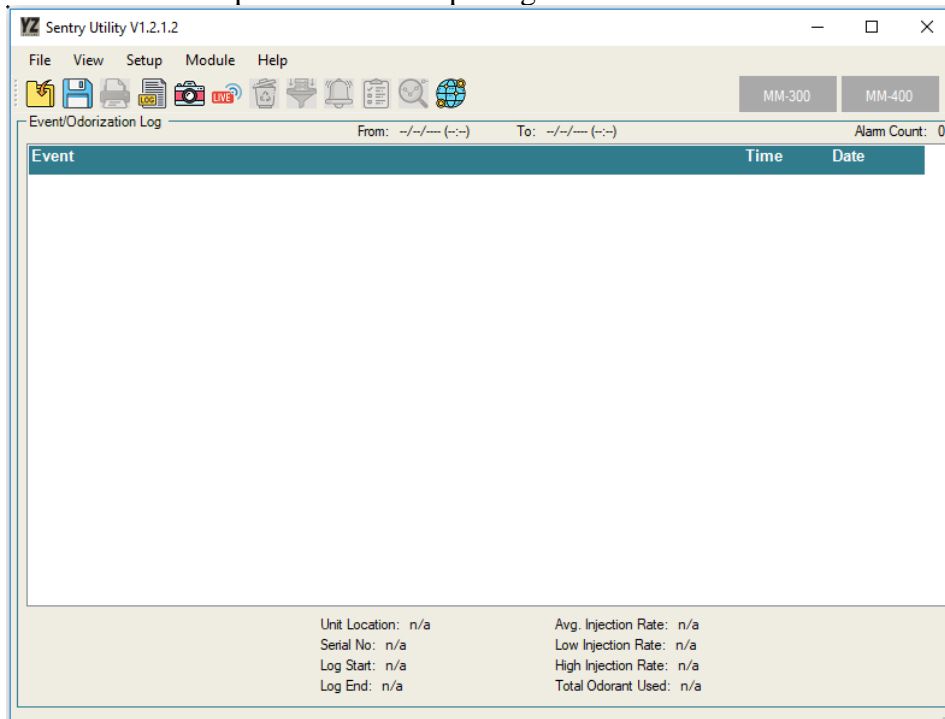
Running Sentry Utility

To start the Sentry Utility software you can do one of the following:

1. Double Click on the Sentry Utility Icon on the Windows Desktop
- OR
1. Select the Start Menu
 2. From the Start Menu select the Programs menu.
 3. From the Programs menu select the Sentry Utility icon.

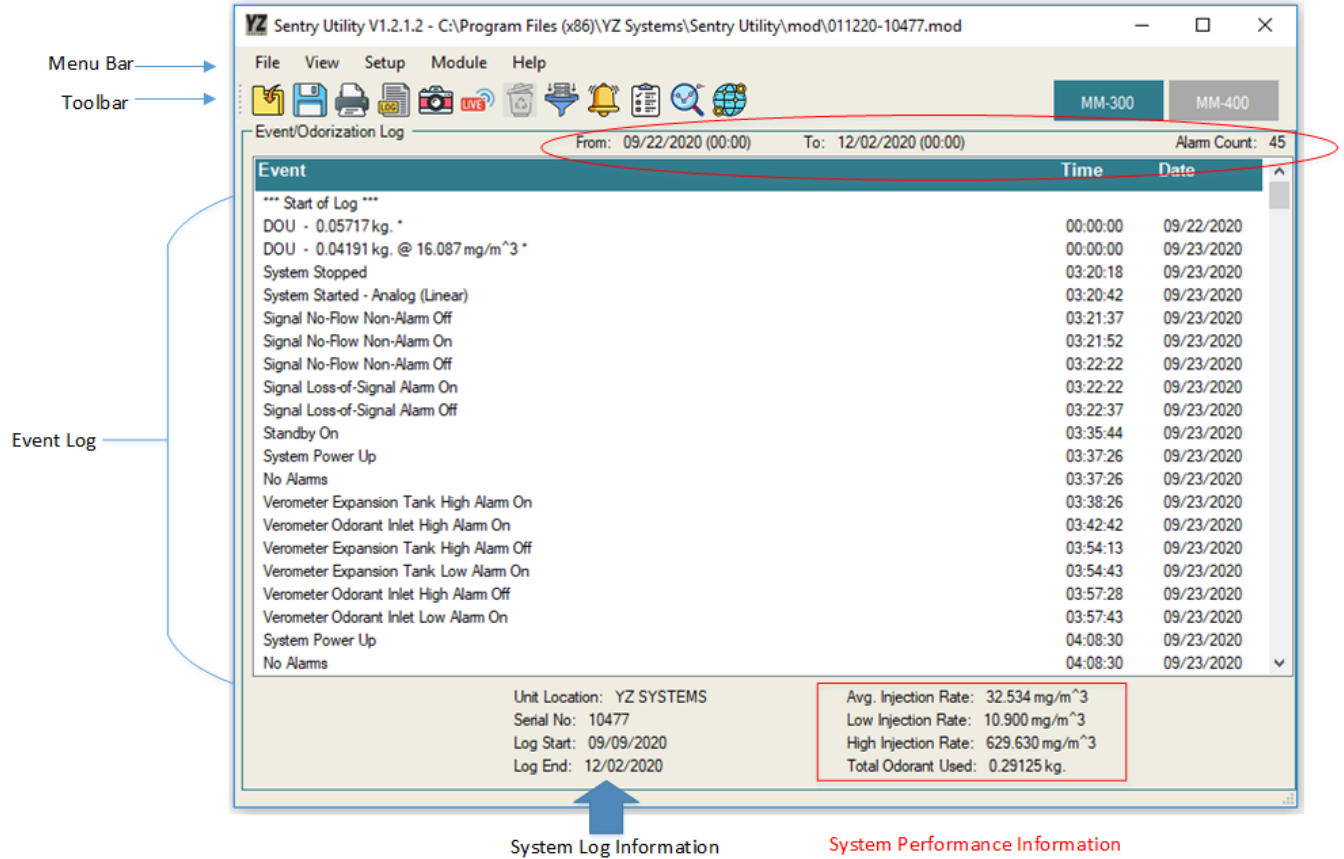
These are a couple of examples on how to open the program. The Windows environment also allows other ways to open an application and an operator familiar with Windows can choose however he/she wishes to invoke the application.

Below is an example of what the opening screen will look like.



Program Window Overview

The Sentry Utility program uses a program window to display an odorization system's event log. A system's complete odorization history and performance can be viewed from this log. The program window contains five basic parts. Each part and its function are described below:



Menu Bar/Toolbar

Two methods used to interact with and perform various operations with the Sentry Utility program. This menu is a typical windows type menu in appearance, and in many functions, but has been specially configured for the Sentry Utility software. You may choose menu options from the text menu bar pop up choices, or you may use the tool bar icon type options for specific selected menu options. (See [Menu Bar Operations](#) and [Toolbar Operations](#) for more details)

Event Log

The event log displays all the logged events of an odorization system. This window is found in the center portion of the screen. All events pertaining to system operation and/or performance are contained here, (i.e., system parameters, system start/stops, system alarms, odorant usage (Gas-DOUs/HOU's or LPG-LOU's)).

Event Marker

The event marker is a visual indicator (data line is highlighted) for current user location in the event log. Using the arrow keys, the marker can be scrolled up or down the event log. Many marked events may be "zoomed" (by double clicking on it) to reveal greater detail about the selected item.

System Log Information

The system log information is shown at the bottom of the log screen, and shows the following:

- Unit Location: The physical location of the odorization system
- Serial Number: The factory assigned serial number given to that NJEX odorization system
- Log Start/End: The beginning and ending dates of the logged events displayed in the current event log

System Performance Information

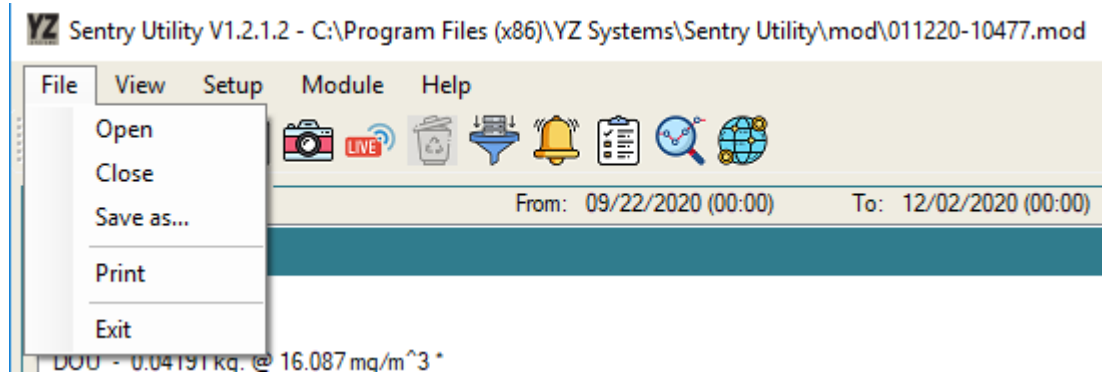
The system performance information gives specific information regarding the historical performance of an odorization system. The system performance contains:

- Alarm Count: The number of alarm conditions recorded on the portion of the Log File being viewed.
- Record Length: The beginning date/time and ending date/time on the portion of the Log File being viewed.
- Average Injection Rate: The average amount of odorant injected by the system (with respect to flow) on the portion of the Log File being viewed. The average injection rate is measured in lbs/MMSCF(mg/m³) of Gas flow, or lbs/10K gallons(mg/liter) of LPG flow.
- High Injection Rate: The highest rate of odorant injected (with respect to flow) by the system on the portion of the Log File being viewed. Measured in lbs/MMSCF(mg/m³) of Gas flow, or lbs/10K gallons(mg/liter) of LPG flow.
- Low Injection Rate: The lowest rate of odorant injected (with respect to flow) by the system on the portion of the Log File being viewed. Measured in lbs/MMSCF(mg/m³) of Gas flow, or lbs/10K gallons(mg/liter) of LPG flow.
- Total Odorant Used: The total amount measured in lbs, kg, or mg of odorant injected by the system during the portion of the Log File being viewed.

Menu Bar Operations

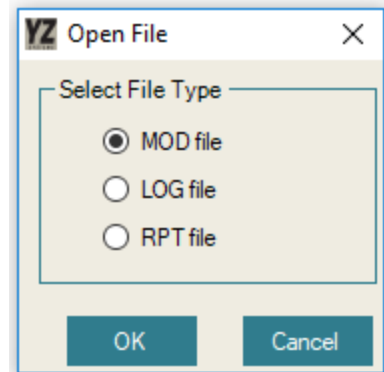
File

This menu provides you with the typical file options to open, close, save as, print file, or exit command to exit the Sentry Utility program.



File/Open

This menu allows the option of opening and existing MOD, LOG or RPT (Report) files that have been previously saved.

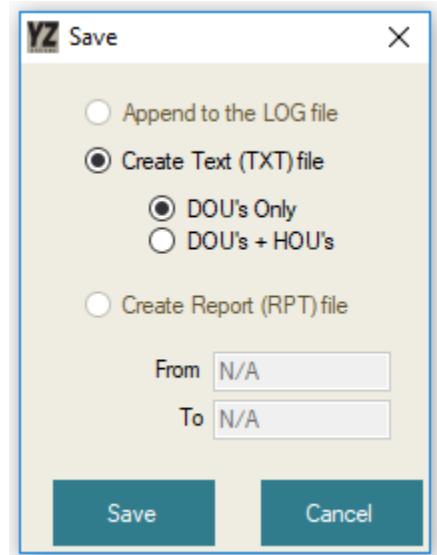


File/Close

This is a typical command to close the data screen presently displaying data.

File/Save as...

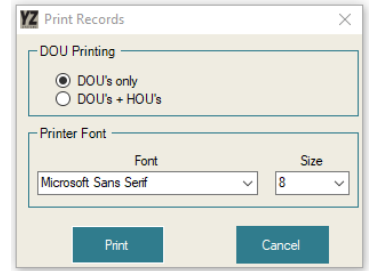
Allows you to save Mod file data to a LOG file (this process in Sentry Utility is called appending the MOD file to the LOG file). The second Save as option would be to save either MOD file or LOG file data to a TXT file (in this case you will also have the option of selecting to save DOU's ONLY or to save DOU's and HOU's in Gas configuration; and LOU's will automatically be selected when utilizing the LPG configuration). The third and final option here is to save LOG file data as a RPT file (if choosing this option you will be given the choice of selecting a date range for the data to be saved for).



NOTE: Only TXT file is available for N-400 (ZEO), all data is stored in the MOD file – no LOG or REPORT files.

File/Print

Gives you the option to send data including DOU's or DOU's & HOU's in the Gas configuration mode; and LOU's will automatically be selected in the LPG mode, to the printer. Additionally you will have font style and size options for printing here.



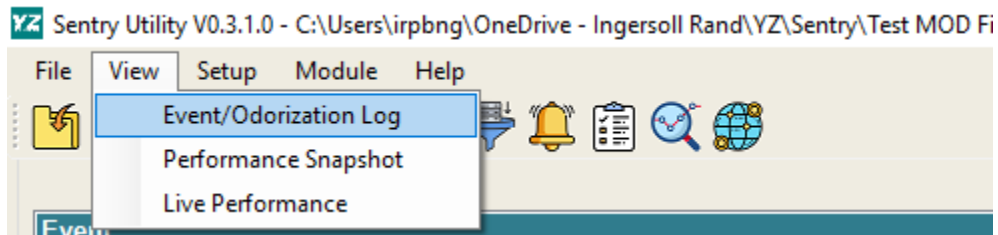
It will print to the default printer on your computer, adjust the default computer to adjust where it prints.

File/Exit

Command to exit the Sentry Utility program.

View

This menu provides you with the option of viewing data from three different screens.



Event/Odorization Log

View log data downloaded from the odorizer.

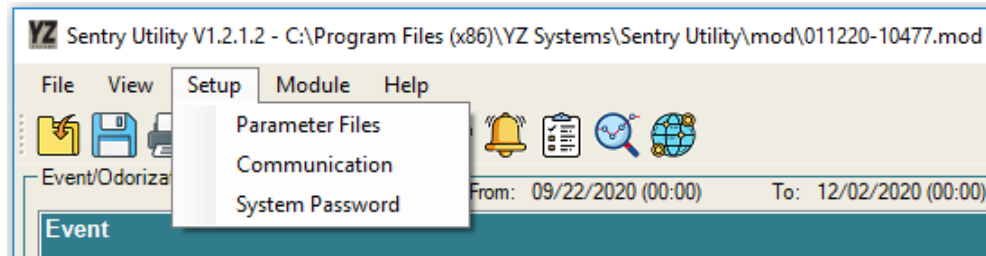
Performance Snapshot (N-300 ONLY)

View the details on automatic communications either polling or downloading that have occurred (as set up in the Performance Snapshot set up screen).

Live Performance (N-300 ONLY)

View an on-line snapshot of the odorizer system and its operation.

Setup



This menu provides three option areas to configure set up data to. They are the Parameter Files, Communication set up, System Password maintenance and Memory Module connection set up.

Parameter Files (N-300 ONLY)

In this area you may pre-configure a file to establish a set of operating parameters, alarm controls, and Alarm delay criteria to be used for an odorization system. They may then be saved to a PRM file location for future use. (See [Parameters Setup](#) and/or [Working with Parameters On-Line](#) to see how PRM files may be used)

YZ Parameter File Editor

Unit Type: Unit Type Unit

Parameter Values

Injection Rate	<input type="text" value="1.00"/>	lbs/MMCF
Maximum Gas Flow	<input type="text" value="0.2000"/>	MMCF/hr
Pump Displacement	<input type="text" value="0.1000"/>	cc/Stroke
Odorant Density	<input type="text" value="6.80"/>	lbs/Gal
Flow (No signal)	<input type="text" value="20.0"/>	%
Low Flow Shutoff	<input type="text" value="2.0"/>	%
Odorant Out Pulse	<input type="text" value="0.0010"/>	lbs/pulse
Prop-to-Time Time/Strk	<input type="text" value="0.02"/>	min/stroke
Max Time/Strk	<input type="text" value="Disabled"/>	min/stroke
Odorant Tank Alarm (High)	<input type="text" value="90"/>	%
Odorant Tank Alarm (Low)	<input type="text" value="10"/>	%
Odorant Inlet Alarm (High)	<input type="text" value="40.0"/>	Psi
Odorant Inlet Alarm (Low)	<input type="text" value="25.0"/>	Psi
Exp. Tank Alarm (High)	<input type="text" value="30.0"/>	Psi
Exp. Tank Alarm (Low)	<input type="text" value="20.0"/>	Psi

Alarm Control

	Enabled	Disabled
Supply Tank Level Alarm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Signal Alarms	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verometer Alarms	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pump Alarms	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Battery Alarm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alarm Contact Delay	<input type="text" value="0"/>	min.
Alarm Callout Delay	<input type="text" value="0"/>	min.

(Note: Value > 240 = Callout/Contact Disabled)

Dial #1

Dial #2

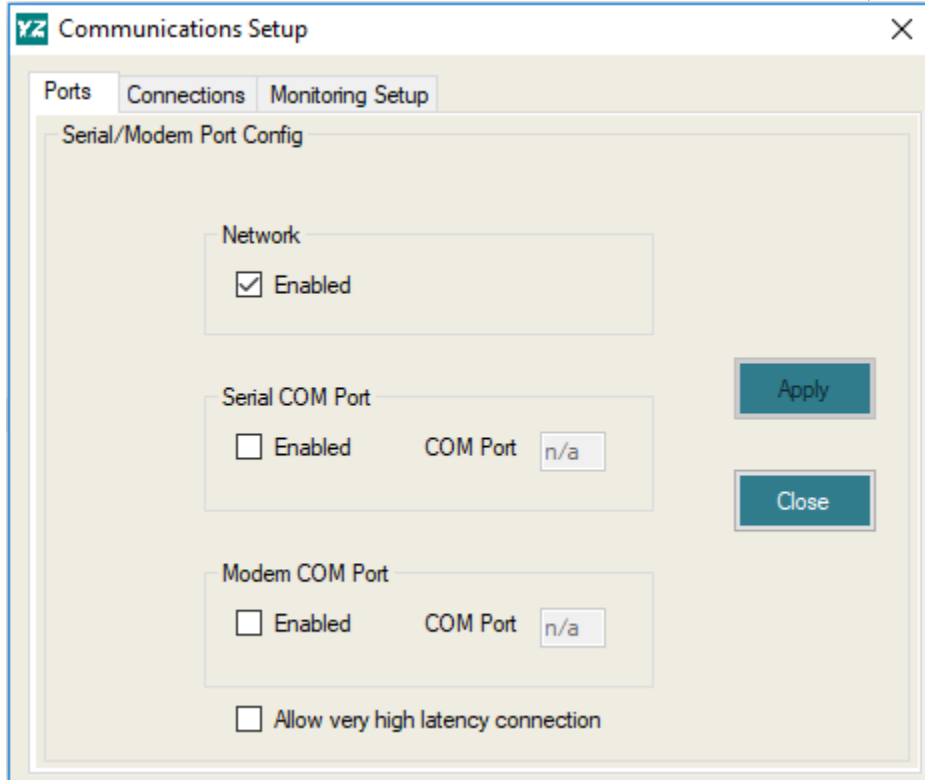
Ranging/Calibration

* Not Available *

Buttons: Open File, Write Params, Use Defaults, Save File, Refresh, Close

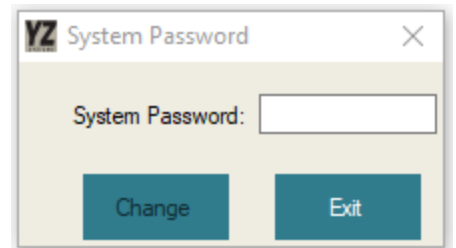
Communication (N-300 ONLY)

In this section you may establish port locations of the computer that Sentry Utility software will utilize for communications, create-edit-remove connection information and define automatic polling or downloading criteria for the software. (See [Communications](#), for more information on remote communications)

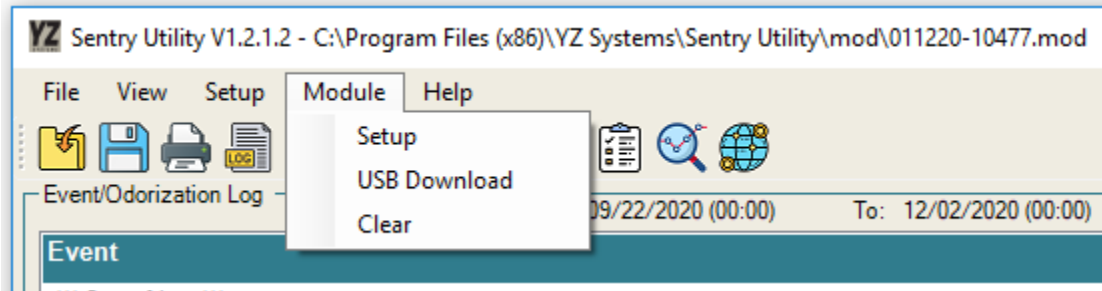


System Password

In this area you may establish a password that will be required to obtain any information from this odorizer system, or you may edit or delete an existing password if your computer has password access to that file at the time. (See [System Password](#) for more information)



Module



Here you will have the ability to directly communicate with the Memory Module via a Download Switch, or a Download Cable for the purpose of Module Setup (initialization), Downloading module data, or Clearing a module.

Module/Setup

Use to setup and initialize a Memory Module (see [Memory Module Initialization](#) for more information).

Module/Download

Use to download a Memory Module (see [Downloading the Monitor Module](#) for more information).

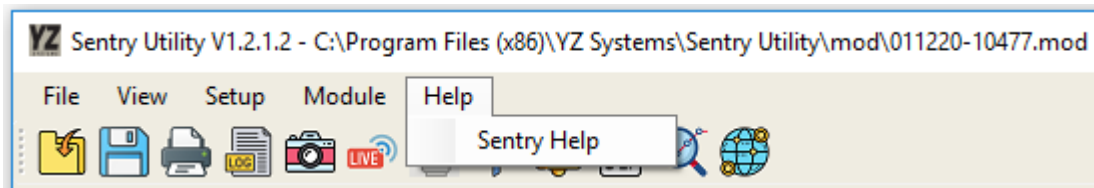
Module/Clear

Use to clear a Memory Module (see [Clearing the Monitor Module](#) for more information) .

Help

Operating Manual

Select to open the version of the manual downloaded with the software.



Operations



Open

This button is the same as the [File/Open](#) menu item.



Save

This button is the same as the [File/Save as...](#) menu item.



Print

This button is the same as the [File/Print](#) menu item.



Event/Odorization Log

This button selects the [View/Event/Odorization Log](#) menu item.



Performance Snapshot (N-300 ONLY)

This button selects the [View/Performance Snapshot](#) menu item.



Live Performance (N-300 ONLY)

This button selects the [View/Live Performance](#) menu item.



Delete

Here you have the option of deleting log entries through a date range, IF you have a file open where deleting log entries is a legal option.



Filter Records

This item allows sorting of Log items for viewing according to several different functions, to allow better diagnostic analysis of the data.

YZ Delete Records

Delete all records through:

(i.e. 10/15/2000)

OK Cancel

YZ Select Log Items

Items to Display

- DOU Entries
- Parameter Changes
- Alarms/Events

Date Range

From (i.e. 3/15/2000)

To

Note: Blank fields will be ignored

Apply Cancel



Alarm Logs

Here you can access the Alarm Log. This allows you to view the alarm by category for a specified period of time. (Note: The HOME key may be used to go to the first entry in the log, and the END key may be used to go to the last entry)

YZ Alarm Log
— □ ×

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From: 05/30/2018 (11:08:41) To: 05/30/2018 (11:08:41)

<<- Back
Next ->>
Close



Parameter Change Log

Here you can access the Parameter Log. This allows you to view the parameters, alarm category enabling, and calibrations for a specified period of time. (Note: The HOME key may be used to go to the first entry in the log, and the END key may be used to go to the last entry in the log)

YZ Parameter Log
✕

System Configuration

Model: 6300GM

Operating Mode: Analog (Linear)

Alarm Control

	Enabled	Disabled
Supply Tank Level Alarm:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Signal Alarms:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verometer Alarms:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pump Alarms:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Battery Alarm:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Alarm Contact Delay: 0 min.

Alarm Callout Delay: 0 min.

Dial #1

Dial #2

Parameter Values

Injection Rate: 25.00 mg/m³

Maximum Gas Flow: 0.008 m³/sec

Pump Displacement: 0.0200 cc/Stroke

Odorant Density: 0.815 g/cc

Flow (No signal): 50.0 %

Low Flow Shutoff: Disabled

Odorant Out Pulse: 0.0010 kg/pulse

Prop-to-Time Time/Strk: 0.04 min/stroke

Max Time/Strk: Disabled

Odorant Tank Alarm (High): Disabled

Odorant Tank Alarm (Low): Disabled

Odorant Inlet Alarm (High): 2.70 Bar

Odorant Inlet Alarm (Low): 2.00 Bar

Exp. Tank Alarm (High): 2.00 Bar

Exp. Tank Alarm (Low): 1.31 Bar

Ranging/Calibration

Analog Zero: 1.0 V

Analog Span: 5.0 V

PPS Span: 50 pulse/sec

PPM Span: 30 pulse/min

Verometer: 46.100 cc

Exp. Tank Zero: 1.0 V

Odorant Inlet Zero: 1.0 V

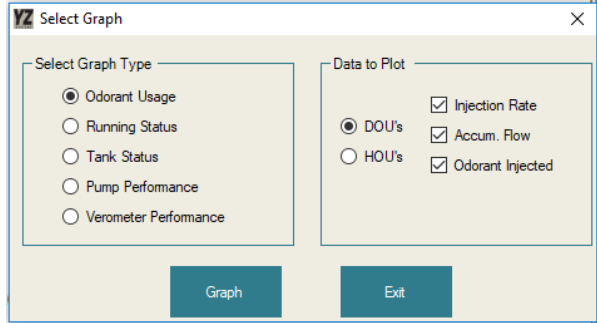
From: 11/04/2020 (14:42:16) To: 11/05/2020 (10:25:11)

<<< Back
Next >>>
Save...
Close

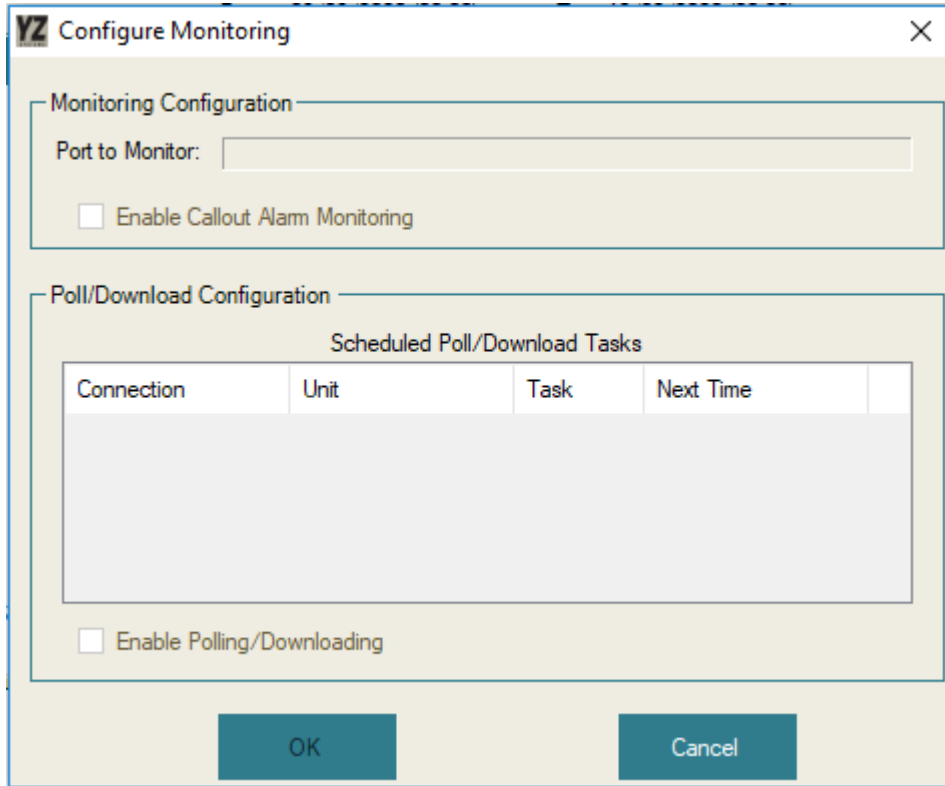


Graph (N-300 ONLY)

At this toolbar button, you may choose to select data for viewing by graph, and then display the resulting graph for viewing and analysis.



Remote Monitoring (N-300 ONLY)



This toolbar button allows you to enable or disable the automated communications functions that have been set up in the communications setup mode for polling and/or downloading information from the odorization system. In this window you may also choose to allow calling into the computer by the N-300 or disallow calls into your computer by the automatic call out function of the N-300; by either checking or unchecking the check box for enabling callout alarm monitoring.

Setup

Overview

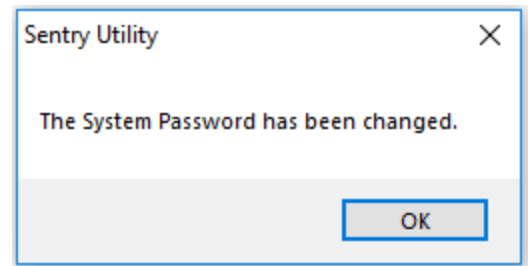
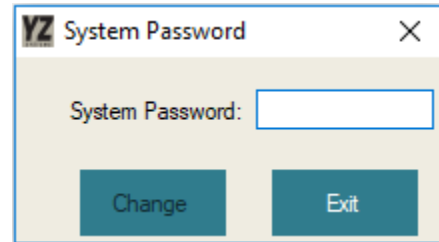
The first step in correctly operating the system lies in setting up communications capability between your PC and the Sentry Utility Memory Module. There are two methods of communicating for the purpose of initializing the Memory Module, or downloading logged data from the Memory Module. Additionally a separate communications port may be configured for MODBUS communication. Your system should arrive with the MM-300 memory module already configured for basic communication with the N-300 controller. This may be confirmed by viewing the "Module" indicator block on the face of the N-300.

The Monitor Module (MM-300 or MM-400) and the odorization unit's LOG file (MM-300) must be correctly initialized before trying to log data.

System Password

This is an option that does not have to be used. You may choose to leave the password blank, and then anyone with the proper program identification and software may obtain information on this system. Many users choose to leave this option blank to allow easier access by multiple users.

1. To select a password, select "Setup" then "System Password " option from the Menu Bar at the top of the software display screen. The "System Password" popup screen will appear.
2. Type in the password that you wish to use for access from now on. (Be sure to write this password down in a secure place in case you forget it in the future.)
3. Choose "CHANGE".
4. To complete this task, choose "OK".



Parameters Setup (N-300 ONLY)

Any parameter may be pre-configured for a NJEX system here, or you may choose to use the default parameters for that model odorizer. A thorough explanation of each parameter and its function is outlined in your NJEX system "user's guide"

1. To pre-configure operating parameters for a system, select "Setup" then "Parameter Files" option from the Menu Bar at the top of the software display screen. The "Parameter File Editors" popup screen will appear.
2. To make changes simply click on each parameter window and adjust the value to a desired level.

The screenshot shows the 'Parameter File Editor' window with the following sections:

- Unit Type:** UnitType: 6300, Unit: GE
- Parameter Values:**
 - Injection Rate: 1.00 lbs/MMCF
 - Maximum Gas Flow: 0.2000 MMCF/hr
 - Pump Displacement: 0.1000 cc/Stroke
 - Odorant Density: 6.80 lbs/Gal
 - Flow (No signal): 20.0 %
 - Low Flow Shutoff: 2.0 %
 - Odorant Out Pulse: 0.0010 lbs/pulse
 - Prop-to-Time Time/Strk: 0.02 min/stroke
 - Max Time/Strk: Disabled min/stroke
 - Odorant Tank Alarm (High): 90 %
 - Odorant Tank Alarm (Low): 10 %
 - Odorant Inlet Alarm (High): 40.0 Psi
 - Odorant Inlet Alarm (Low): 25.0 Psi
 - Exp. Tank Alarm (High): 30.0 Psi
 - Exp. Tank Alarm (Low): 20.0 Psi
- Alarm Control:**
 - Supply Tank Level Alarm: Enabled, Disabled
 - Signal Alarms: Enabled, Disabled
 - Verometer Alarms: Enabled, Disabled
 - Pump Alarms: Enabled, Disabled
 - Battery Alarm: Enabled, Disabled
 - Alarm Contact Delay: 0 min.
 - Alarm Callout Delay: 0 min.
 - (Note: Value>240 = Callout/Contact Disabled)
 - Dial #1: []
 - Dial #2: []
- Ranging/Calibration:** * Not Available *

Buttons at the bottom: Open File, Write Params, Use Defaults, Save File, Refresh, Close.

- Note: In the Alarm Control section the check boxes for Alarm category "Enabled" or "Disabled" are for information only. Changes to these settings may ONLY be made directly in the N-300/N-400 controller.
3. You may program Alarm Contact Delays, and Alarm Callout Delays, in this window.
 4. When you have finished programming these values, this parameter file may that you have created should be saved in the PRM directory of SENTRY UTILITY. You may do this by choosing the Save File button, and naming the file and saving it. It will remain stored here for future use if desired again. Additionally when you start your odorizer for the 1st time after programming these values you will be asked if you want to use the pre-configured settings. If you choose yes, these values will then be used to operate the odorizer, until changed by an operator.

Memory Module Initialization

1. To initialize an odorizer module and create its LOG file (MM-300), select "Module" then "Setup" option from the Menu Bar at the top of the software display screen. The "Module Setup" popup screen will appear.
2. Complete all information requested in this screen.
 - The odorizer serial number is set by the factory and found on the side of the NJEX electronic controller as shown in the illustration.
 - The correct odorizer serial number must be initialized into the module in order to download data from the module.
 - If "Use System Password" is checked, access the module for Downloading, Clearing, or any type communication will require a password. See System Password for more information. The password previously established will now be required for any access to information in the memory module. The password is not required for normal logging operations.
 - Gas Only:
 - Enter in the contract hour for the odorized pipeline. This option sets the beginning and end time for the Daily Odorant Usage (DOU) stamp. Enter in the HOU interval desired for this system. This option sets the frequency of odorant usage updates to the Sentry Utility file. The standard update is based on 1 hour, but you have the option of choosing 2, 4, or 6-hour update periods for the (HOU) stamp. Typically the longer intervals would be advantageous for relatively low flow or odorization conditions.
 - Check the box for Auto-Parameter Upload if you desire to use the parameters that have been programmed and saved to a parameter file (see Parameters Setup and Working with Parameters On-Line for more information). Now you will need to click on the "... " button to view the Open file window. Here you will now be able to choose one of the previously saved files to be automatically uploaded.
 - Enter in the values for low and high injection rate alarm limits. These limits will be used by the Sentry Utility program. Any odorization rate that exceeds these values will be marked in the Event log.
3. Connect the module to be initialized to the computer using a parallel port or a USB-MM adapter cable. The correct port must be selected for the connection to be established.
4. Choose the Init Module button. If the program reports that the module cannot be found, check that the module is firmly connected to the printer port. Also, check that the module is connected to the port designated in the "Module Port" option of the System setup menu.
5. When module initialization is complete, choose the "OK" button, and remove the module from the computer. The Monitor Module is now prepared to record the odorizer performance. Replace it into the N-300/N-400 and verify that the Module indicator is active on the screen, indication that the N-300/N-400 and the Memory Module are communicating.

YZ Module Setup

Log File Data

Company Name

Company Address

Company City

Company State

Company ZIP

Model Number of Unit

Odorant Type

Monitor Module Parameters

Unit Location

Serial Number of Unit System Mode

Module Type MM-300 MM-400 (ZEO)

Use System Password? Password

Contract Hour HOU Interval

Auto-Parameter Upload?

Injection Rate Alarm Limits

High Injection Rate Alarm Limit mg/m³

Low Injection Rate Alarm Limit mg/m³

Warning: Once a monitor module has been initialized (and the Log File created), the Sentry Utility program will not allow you to change any Monitor Module parameters while a LOG file exists for that serial number. If you have initialized a module and need to change a parameter, the LOG file created will need to be re-named or deleted and the module re-initialized.

Installing Memory Module into Controller

1. Open the electronic controller's front panel. Insert the module (MM-300) into the Sentry Utility Module connector. As illustrated, the Sentry Utility Module connector is located in the back right hand corner of the termination board.
2. If the unit is turned on, turn it off for 10 sec., then back on. It is already off, simply turn the power on.
3. As the unit scrolls through the initial screens verify the information as instructed in the NJEX User's Guide. If you chose to use pre-configured parameters during the Memory Module set up (see Memory Module Initialization for more information), you should see a screen, asking if you want to use these Pre-Config settings. If so choose "YES", if you wish to use the settings already in the N-300, choose "NO". If you did not choose to use a pre-configured set of parameters when initializing the Memory Module, this window will not show up at all.
4. Close and secure the electronic controller's front panel. Check for the N-300 to be operational and the main menu to be displayed.
5. Verify that the Module indicator is active on the display screen of the N-300. When the indicator is on, the module is operational.
 - **Warning:** the Monitor Module will only record the units' performance events if the Module indicator is displayed. If the controller does not show the Module indicator, the module is not ready to record system events. Check the module connection to the termination board to be secure. The serial number initialized into the module must also match the factory's serial number pre-programmed into the N-300 controller. Refer to the NJEX User Manual for details.
6. Start the system as outlined in the NJEX User's Guide. The controller will now record all of the odorizer operations in the Monitor Module. Otherwise, the odorizer operation will be completely unaffected by the module's presence.

Removing the Monitor Module from Controller

1. Open the NJEX electronic controller. Place the unit in STANDBY mode for the N-300 or stop the unit for the N-400. Refer to the NJEX User Manuals for details.
2. Open the electronic controller's front panel.
 - **Tip:** there is no need to turn the odorizer off when removing or installing a module, unless you wish to load pre-configured programming from the memory module to the N-300.
3. Remove the current module from the controller.
4. Reinstall a cleared module onto the termination board. Refer to the "Clear" pull-down menu in the Sentry Utility program to clear a module.
 - **Tip:** there are two methods on how to handle downloading modules. One is to remove the module from the odorizer and replace it with a second alternate module. The module is then returned to a central desktop PC and the stored data downloaded. The second method is to do a "remote" download with a laptop computer. A module can be quickly downloaded or cleared in the field and the same module returned quickly to service in the odorizer.

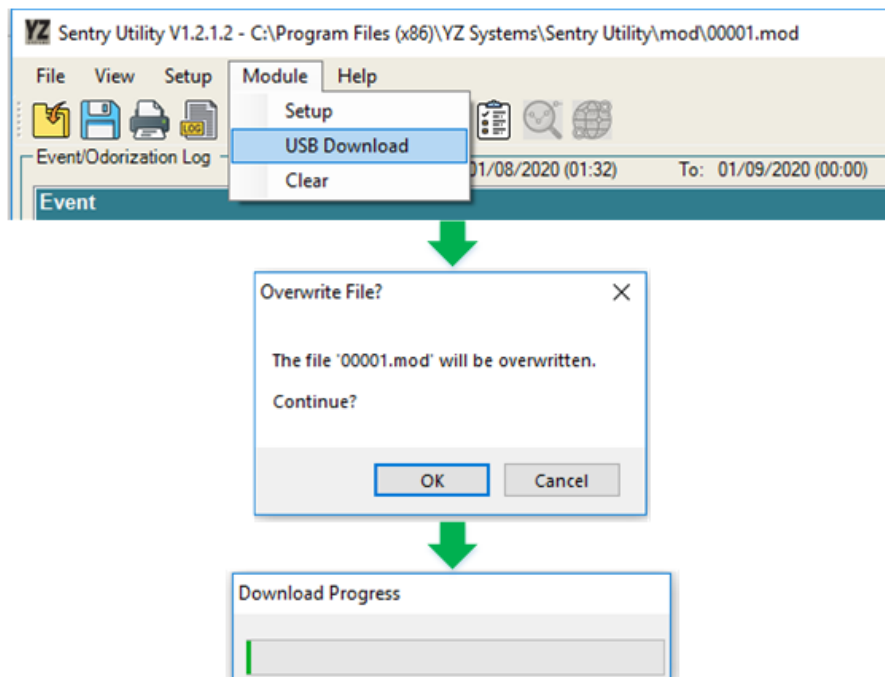
5. Close the electronic controller's front panel and check the main menu to verify that the Module indicator is active on the display screen.
6. Take the odorization system out of the "Standby" mode for the N-300 or restart the system for the N-400.

Data Retrieval and Management

The next step involves downloading stored data from the Monitor Module and then using the Sentry Utility program's data management functions to view and evaluate the stored data. Afterwards, the program can be used to maintain the odorization system's audit trail. There are two methods of downloading Module information. One is with a Download Cable connected to your computer. The second is via the communications connection previously set up in your computer to access the module remotely.

Downloading the Monitor Module

1. Connect the module to be downloaded to the computer using a download cable or connect to a controller remotely (*N-300 ONLY*).
2. From the Sentry Utility program window, select "Module" then "Download" from the Menu Bar at the top of screen. The "Overwrite File" popup screen will appear, or you will get a message that says "MM not present".
3. If you have already appended the old MOD file data to a log it is OK to overwrite the old MOD file. The LOG file will have all of your usage information.
4. If you get the "MM not Present" message, check to see that the module connection.
5. After the module has been downloaded, you should view the Sentry Utility Event Log to display the odorization system's recorded event data.



Clearing the Monitor Module

Just like downloading the Memory Module, there are two options of clearing Module information. One is with a Download connected to your computer. The second is via the communications connection previously set up in your computer to access the module remotely (*N-300 ONLY*).

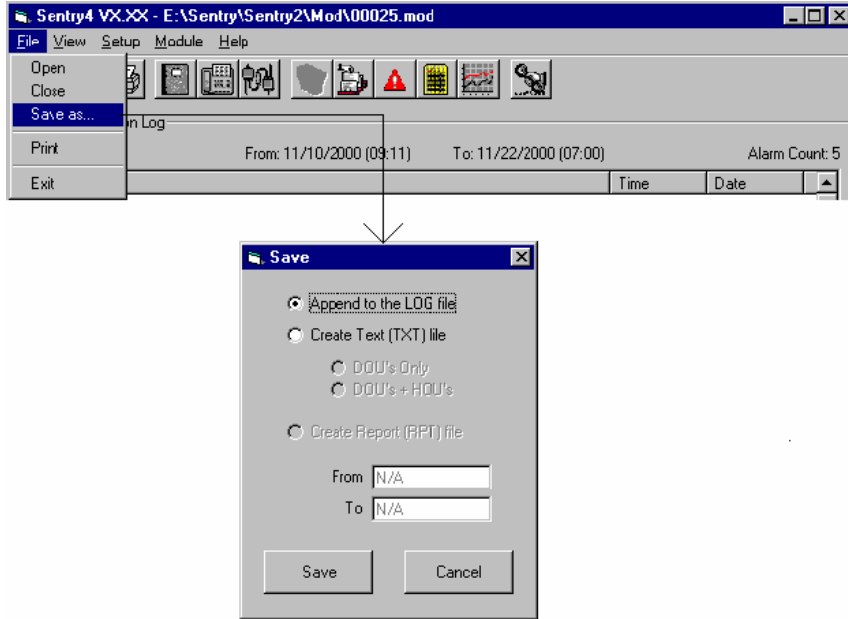
Warning: This operation is irreversible and all system performance events stored in the module will be lost.

Tip: The Clear option does not affect the module's setup information. A module does not need to be reinitialized after it has been cleared.

1. Connect the module to be downloaded to the computer using a download cable or connect to a controller remotely.
2. From the Sentry Utility program window, select "Module" then "Clear" from the Menu Bar at the top of screen. The "MM status" popup screen will appear, or you will get a message that says "MM not present".
3. If you get the "MM not Present" message, check to see that the module connection.
4. After the module has been cleared, you will see the Module Cleared status window. Choose "OK" to proceed.
5. Remove the module/cable from the computer. Return the module to the controller and exit the standby mode.

Saving Monitor Module Data – N-300

1. If not already done, download a system's event log into the Sentry Utility program window. Refer to the [Download the Monitor Module](#) and/or "Download MOD File" options of the Sentry Utility program.
2. Select the "File" menu.
3. Choose the "Save As" option.
4. When the save options pop-up window appears, choose the "Append to the Log file" button. The events in the MOD file have now been saved to the LOG file.



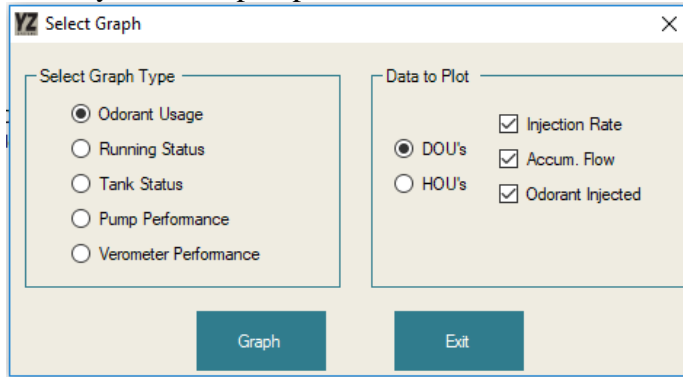
Saving Monitor Module Data – N-400

1. When the memory module content is downloaded the MOD file is named with the serial # and the date and stored in the C:\YZ Systems\Sentry Utility\mod folder so that each download is unique and can be referenced in the future.
 - a. Example: 011000 2022_02_10.mod
2. MOD files can be saved out as TXT files or Printed

Graphing Data (N-300 Only)

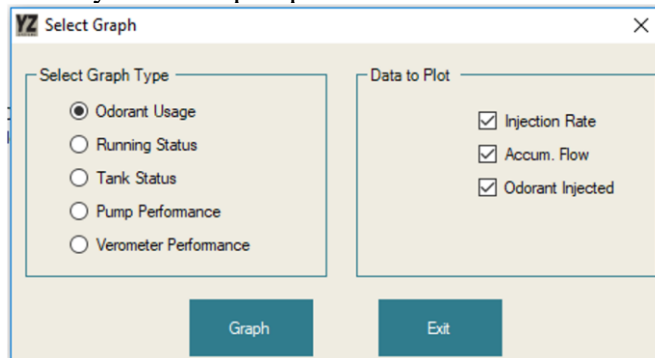
1. Begin by opening the file that you wish to graph information from. (Choose the [File/Open](#) command from the File Menu or the [Open Button](#) from the toolbar, then choose the file and open it.)
2. Once the data is displayed on the screen, you may choose the [Graph Button](#) from the toolbar to proceed to the Select Graph screen.
3. In the Gas mode, at this screen you may choose one of the available options to base the graph on. Each one of the options will have additional check boxes to allow you to make selections of which specific data to graph.

GAS System: Graph options for N-300 MOD file data:

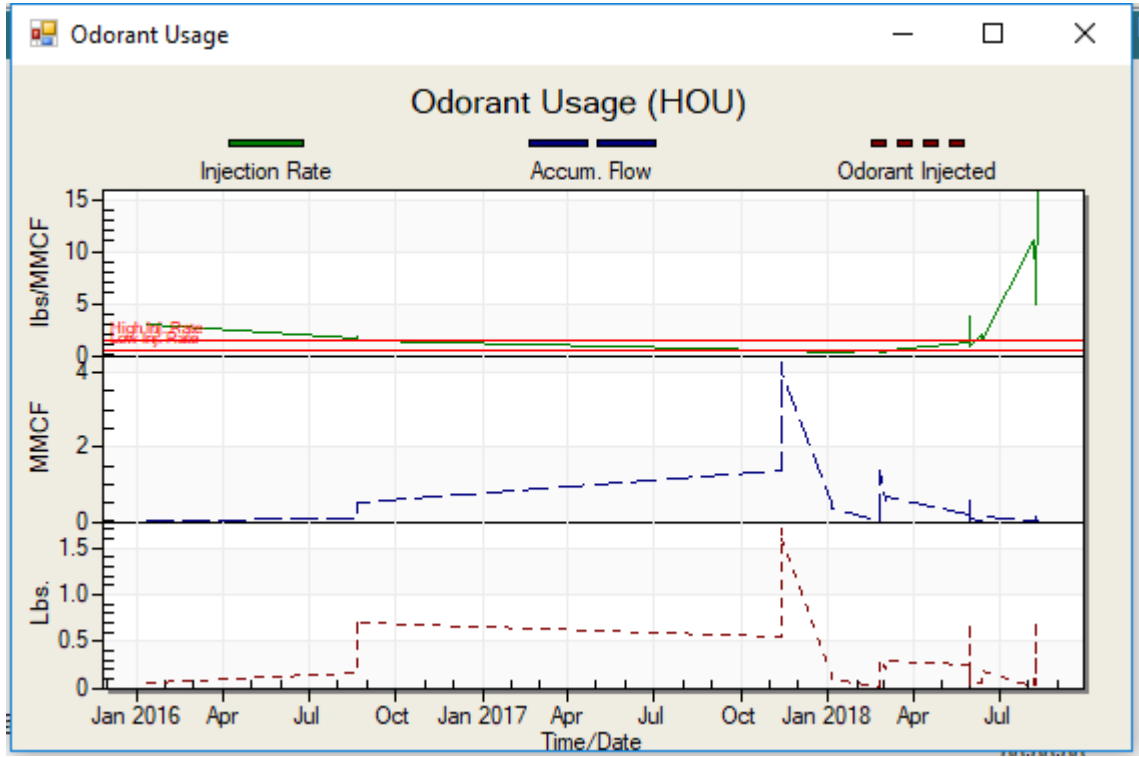


4. In the LPG mode, at this screen you may choose one of the available options to base the graph on. Each one of the options will have additional check boxes to allow you to make selections of which specific data to graph.

LPG System: Graph options for N-300 MOD file data:



- When you have made your graphing selections choose the GRAPH button, and the graph reflecting that data will appear.



Note: Once you are on a graph screen, additional customizing options for the graph may be accessed by right clicking your mouse while over the graph.

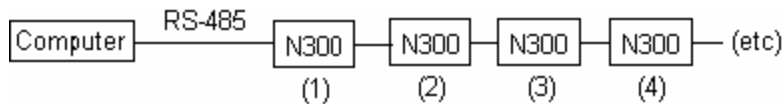
Communication (N-300 ONLY)

Overview

The function of communicating with your odorizer utilizing the Sentry Utility software may be accomplished in two different manners. One is to communicate via a serial connection, while the other is via a modem connection. Each type connection requires specific set up configuring to allow this communication. The options will be detailed below, and set up specifics will be provided on the following sections.

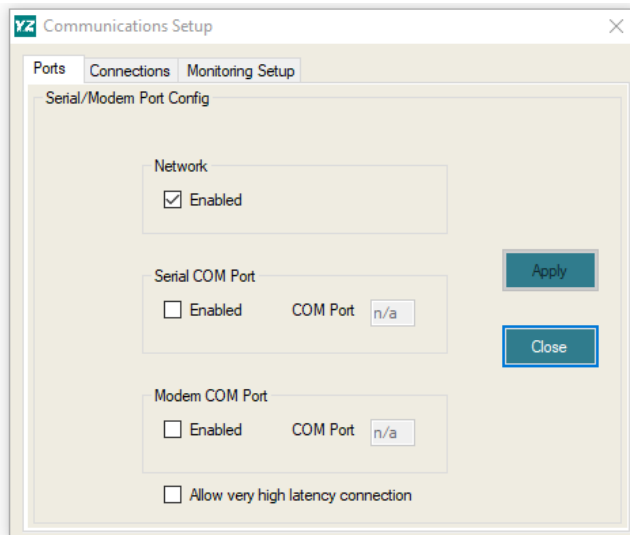
Sentry Utility Serial Connection Basics

The serial connection between your computer and the odorizer is accomplished via a RS-485 connection. The wiring for this connection may not exceed 4000' of wire. You may only establish one connection at a time, but each connection may include from 1-32 specific units.



General Communications Set Up

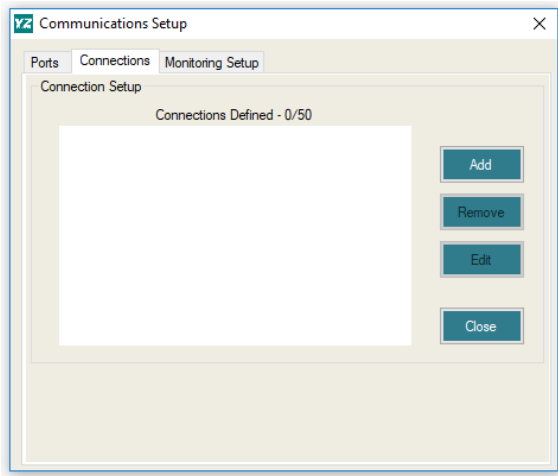
1. Begin by opening Communications Setup window. (Choose the [Setup/Communication](#) command from the File Menu.)



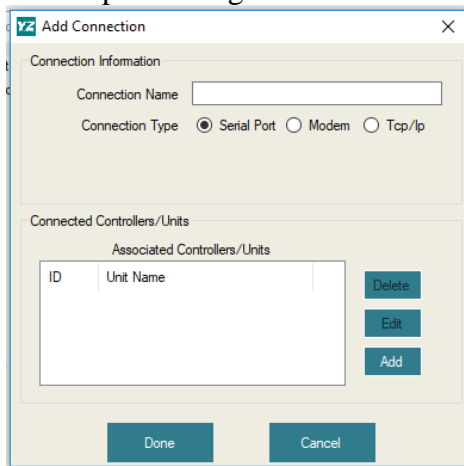
2. The "Ports" Tab should already be active. Choose to enable the communications port(s) as applicable.
 - If using an IP connection via an internet gateway, enable the "Network Option"
 - If using a modem on your computer, determine the COM port that the modem is using and enter it on the "Ports" tab of the Communications Setup window.

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- If using a serial port on your computer, determine the COM port that the serial port is using and enter it on the “Ports” tab of the Communications Setup window.
 - Verify correct wiring connections to TB-1 pins 11-16. (Refer to Wiring Control Document)
 - CAUTION: If you make a change it will affect your ability to remotely communicate with the Memory Module. If changes are made they must be loaded to memory by pressing the "APPLY" key before they are active.
3. Select the “Connections” Tab of the Communications Setup window and choose "Add" to add your connection information.

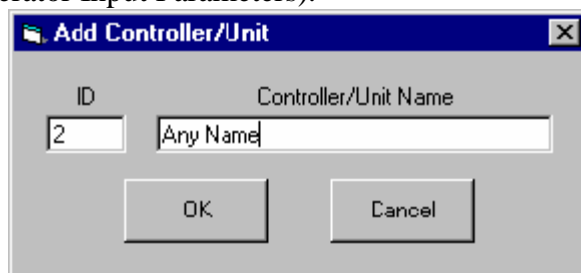


4. On the “Add Connection” window, enter a “Connection Name” to describe what modem you will be calling or to what serial network you will attach.
5. Choose the “Connection Type” that you have named. (Either Serial Port, Modem or TCP/IP)
- If you choose the Modem option, you will need to enter the Phone # before proceeding.



On the “Add Connection” window, select the "Add" key.

The “Add Controller/Unit” window will pop up. Enter the MODBUS address for the N-300 controller you wish to add to this connection, under “ID”. MODBUS address is in the parameter section of the N-300 controller. Enter a descriptive name for this controller such as the location of the controller. (Refer to NJEX User's Guide section on Setting Operator Input Parameters).

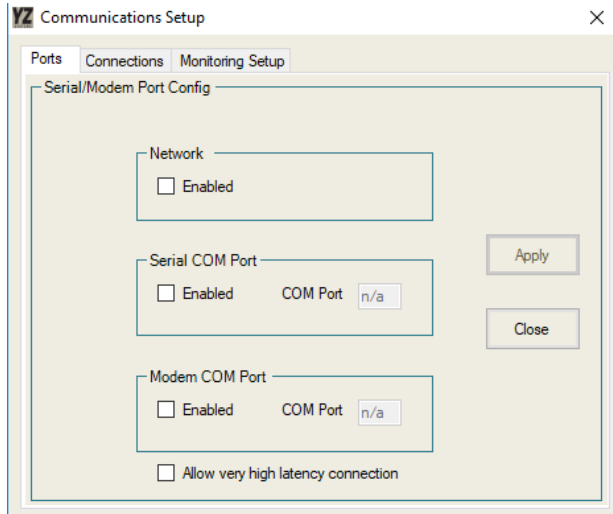


6. Now choose OK.
 - **Note:** At this point you have the option of repeating step 6-8 to add more controllers to a connection by selecting the ADD button. Choose the DONE button to proceed to step 9 if no other controllers need to be setup for this connection.
7. On the “Add Connection” window, select the "Done" key.
 - **Note:** At this point you have the option of repeating step 3-9 to add more connection by selecting the ADD button. Choose the DONE button to proceed to step 10 if no other controllers need to be setup for this connection.
8. When you have configured all of the needed communication connections, choose "Close". Communications setup is complete; the Sentry Utility System is ready to connect using Live View.

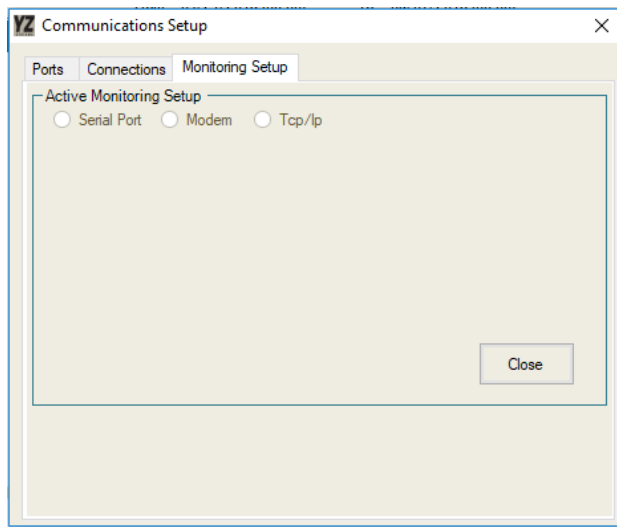
Note: This is all that has to be done to use ONLY the Live View function. If Monitoring functions will be used proceed to Monitoring Set Up.

Monitoring Set Up

1. Begin by opening Communications Setup window. (Choose the [Setup/Communication](#) command from the Menu bar.)

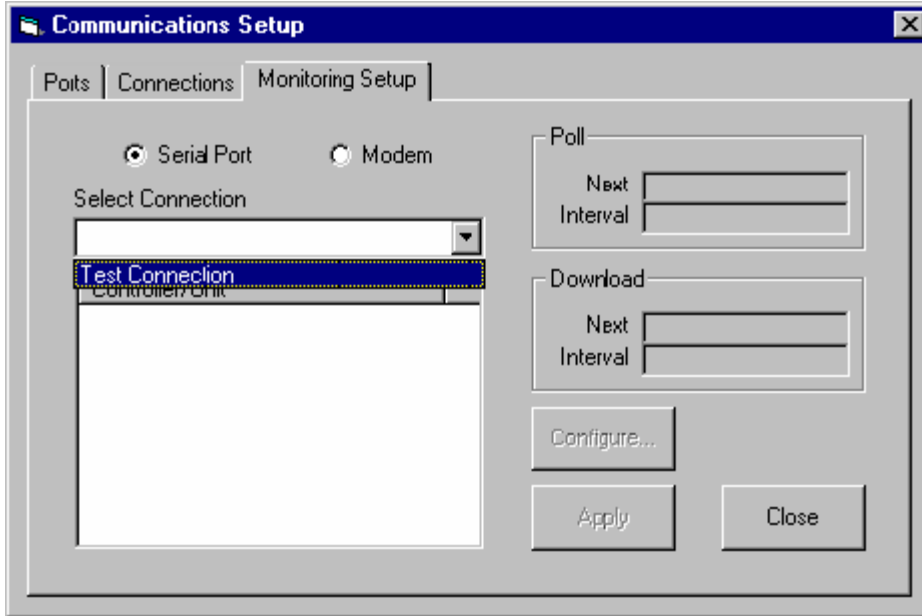


2. Select the “Monitoring Setup” Tab of the Communications Setup window and choose either Serial Port, Modem or TCP/IP to set up monitoring configuration information and go to the appropriate section below:

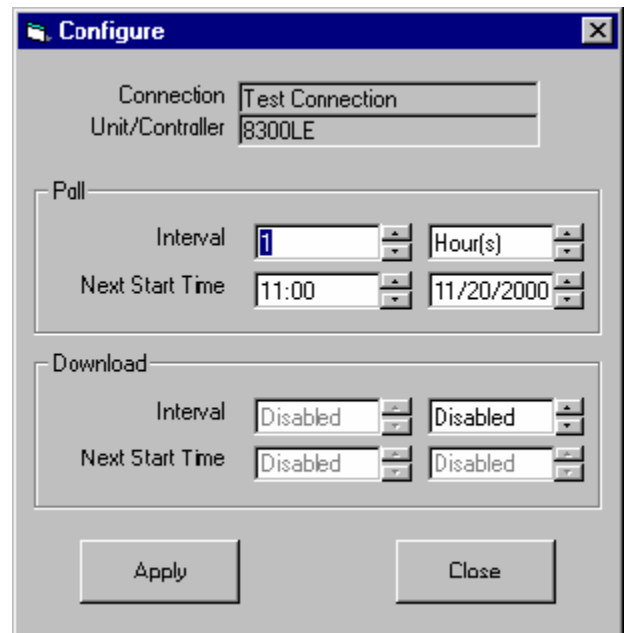


Serial Port:

1. The “Monitoring Setup” Tab of the Communications Setup window will now allow you to select which connection to use. (Choose from the “Select Connection” pull-down)
2. After you choose the connection that you wish to use, you may click on a controller and select “Configure...” to bring up a screen for configuring the controller for polling and/or downloading automatically.

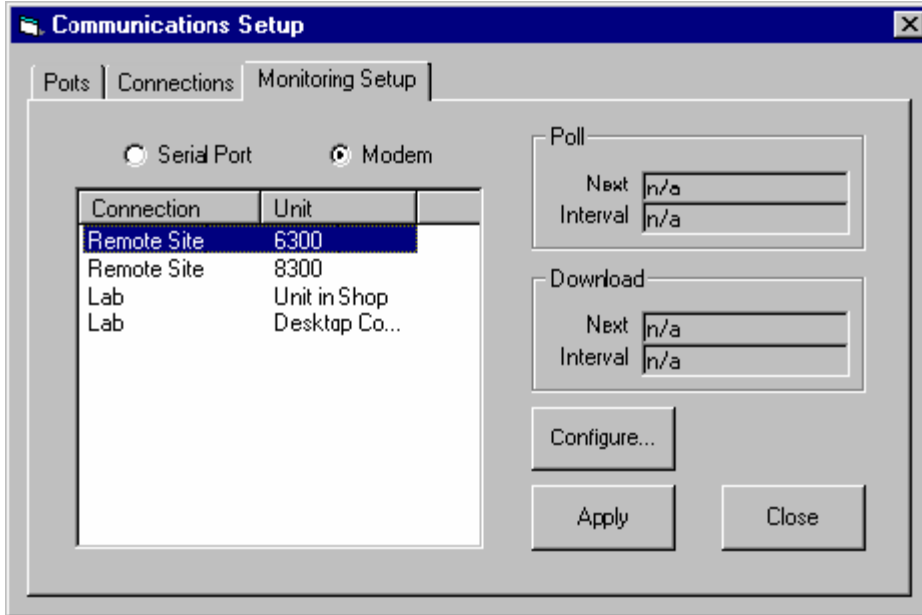


3. In the configuring connection screen you may enter details on when you wish the odorization data to be polled or downloaded. Use the arrow key beside the window that you wish to change the details for to increment the setting in the window to the setting that you wish to use.
 - Polling is a snap shot of information at that particular time as would be displayed on the Live View Screen, while download is a snap shot PLUS a complete download of information in the module, which will be saved as your Mod File.
 - Repeat steps 2 and 3 for each controller set up required.
4. To load the changes to the memory choose "Apply" to load them into memory, and then choose the "Close" key to continue to the next step. You should now be back at the main Sentry Utility screen.



Modem:

1. You should now see a list of all available modem-connected controllers defined in Sentry Utility.
2. Remember: you may have as many as 50 different modem connections, and each modem connection may have as many as 32 different units.

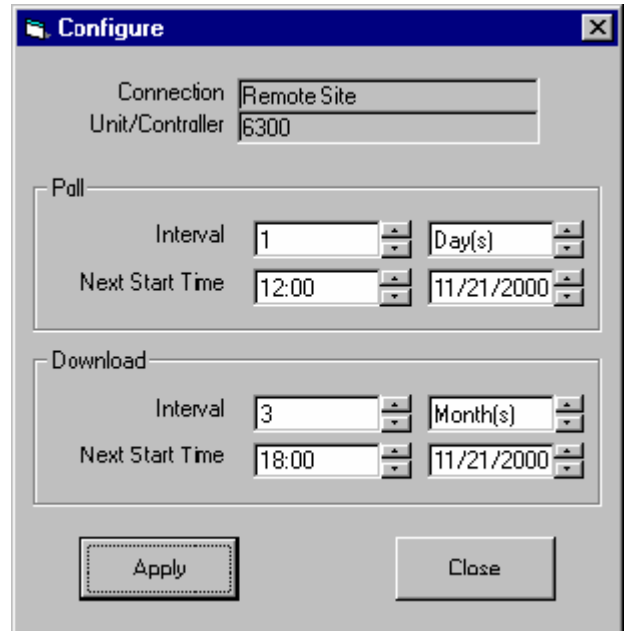


3. You may now click on a controller and select “Configure...” to bring up a screen for configuring the controller for polling and/or downloading automatically.
4. In the configuring connection screen you may enter details on when you wish the odorization data to be polled or downloaded. Use the arrow key beside the window that you wish to change the details for to increment the setting in the window to the setting that you wish to use.

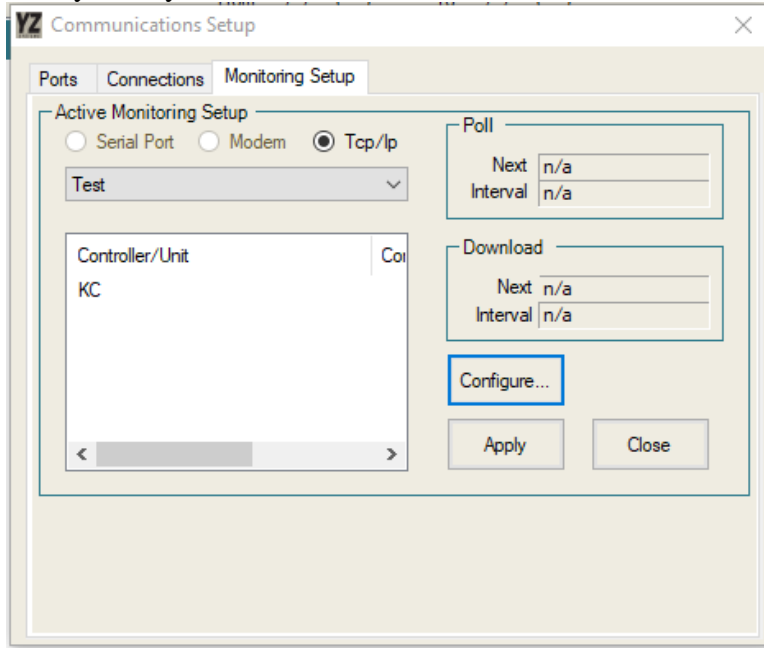
- Polling is a snap shot of information at that particular time as would be displayed on the Live View Screen, while download is a snap shot PLUS a complete download of information in the module, which will be saved as your Mod File.
- Repeat steps 2 and 3 for each controller set up required.

5. To load the changes to the memory choose "Apply" to load them into memory, and then choose the "Close" key to continue to the next step. You should now be back at the main Sentry Utility screen.

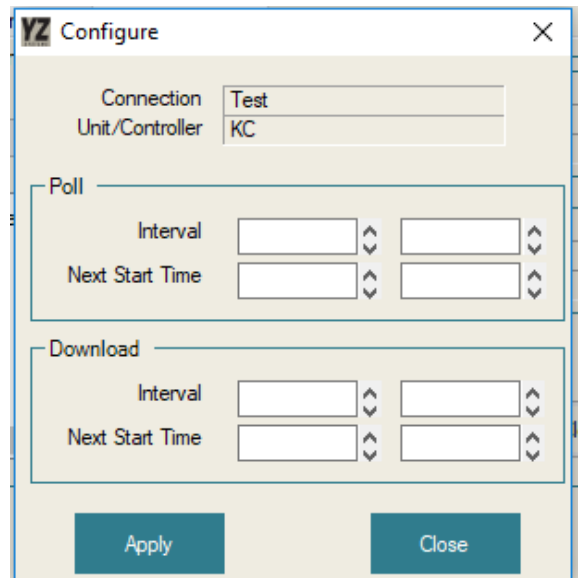
TCP/IP:



1. You should now see a list of all available TCP/IP-connected controllers defined in Sentry Utility.




2. You may now click on a controller and select “Configure...” to bring up a screen for configuring the controller for polling and/or downloading automatically.
3. In the configuring connection screen you may enter details on when you wish the odorization data to be polled or downloaded. Use the arrow key beside the window that you wish to change the details for to increment the setting in the window to the setting that you wish to use.
 - Polling is a snap shot of information at that particular time as would be displayed on the Live View Screen, while download is a snap shot PLUS a complete download of information in the module, which will be saved as your Mod File.
 - Repeat steps 2 and 3 for each controller set up required.
4. To load the changes to the memory choose "Apply" to load them into memory, and then choose the "Close" key to continue to the next step. You should now be back at the main Sentry Utility screen.

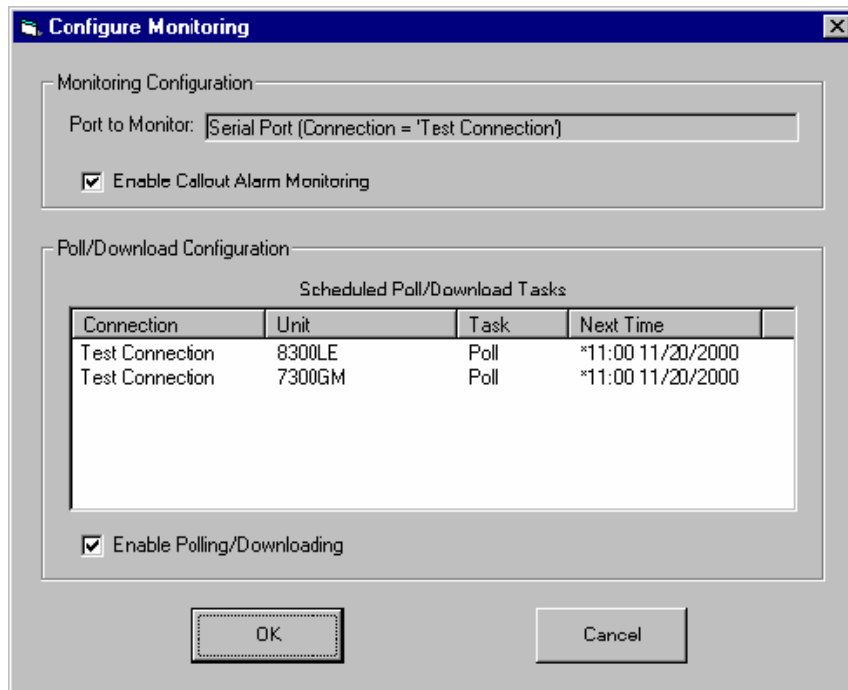


Remote Data Retrieval (N-300 ONLY)

There are two methods of online direct retrieval of Sentry Utility information via either method of remote communication. One is via direct polling of information from the memory module, and the other is via a Live View snap shot screen. In either case the 1st step should already be done - setting up the communications. You must now establish which communication method that you desire to use, and then you may proceed to one method or the other to view the odorizer information.

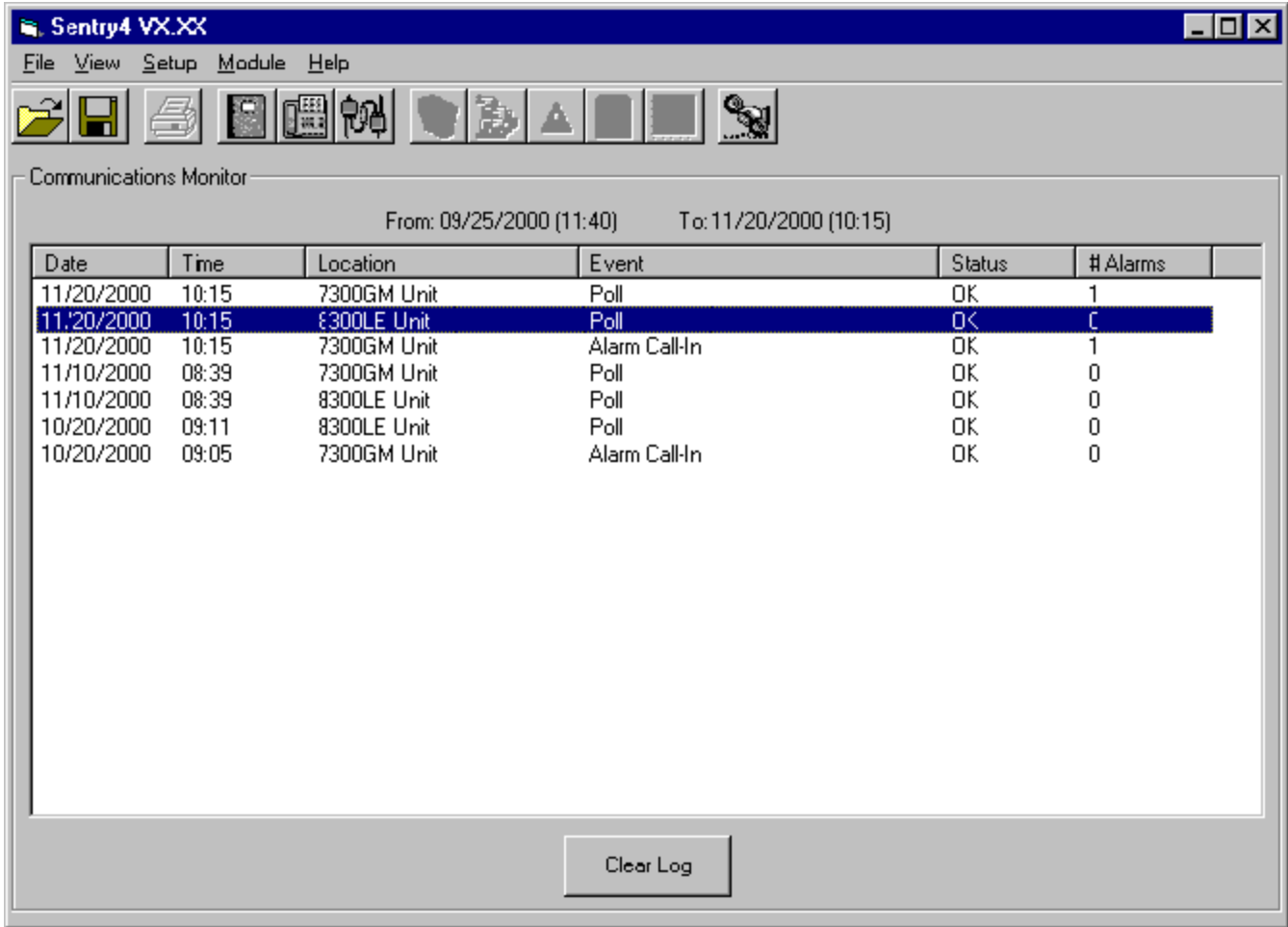
Automatic Operations (Monitoring)

1. From the toolbar at the top of the screen, click the Monitoring button .
2. Select check boxes as desired.



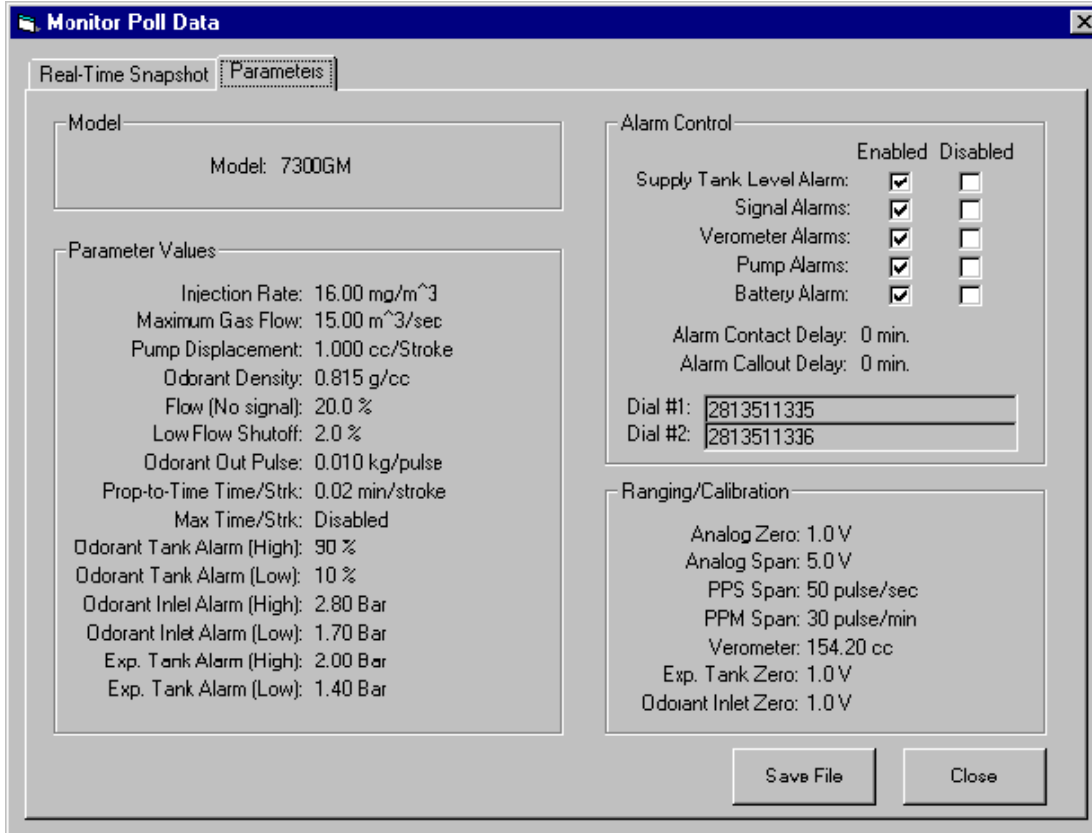
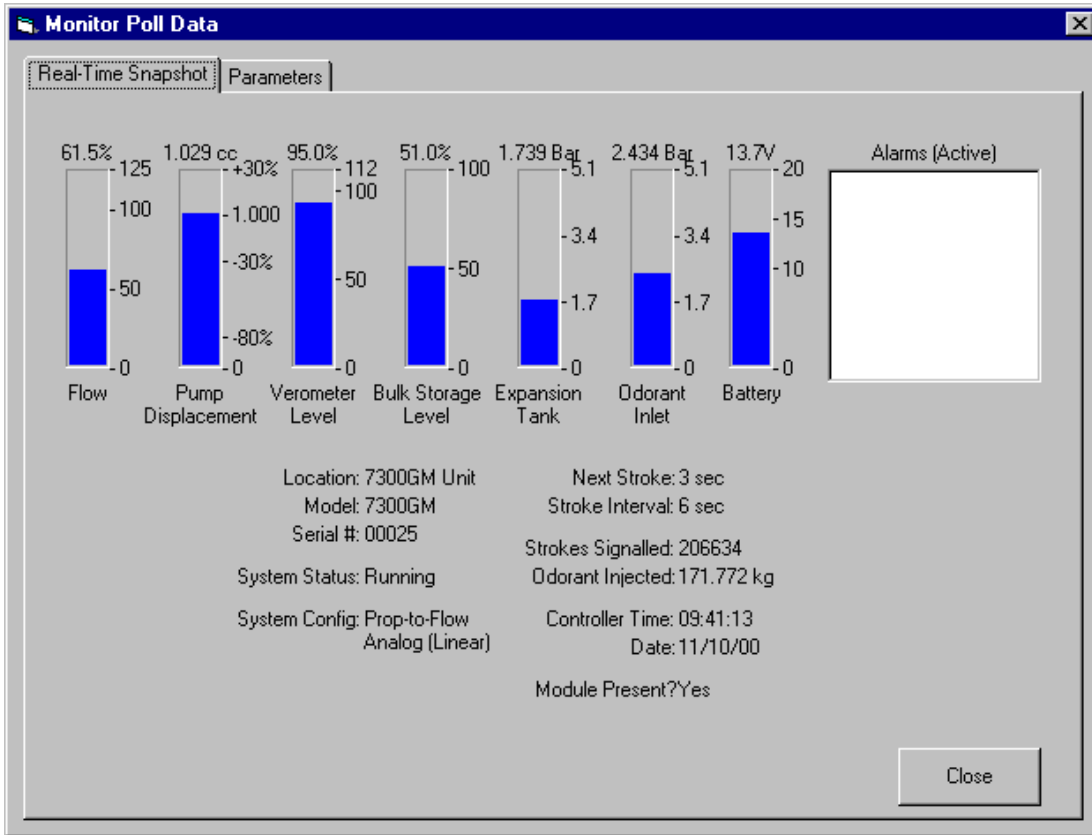
Connection	Unit	Task	Next Time
Test Connection	8300LE	Poll	*11:00 11/20/2000
Test Connection	7300GM	Poll	*11:00 11/20/2000

- Note: If the 'Enable Callout Alarm Monitoring' check box is not checked automatic alarm call-ins from the odorizer cannot occur. If you wish for your computer to automatically receive updates when an alarm occurs, this box must be checked.
 - Note: If the 'Enable Polling/Downloading' check box is not checked automatic scheduled communication cannot occur. If you wish for your computer to automatically poll the odorizer and automatically download the memory module, this box must be checked.
3. Open the Performance Snapshot window. Choose the [View/Communication](#) command from the Menu bar.
 4. You should now see the Performance Snapshot Screen. At this screen you can observe the automatic polling, alarm call-ins, and automatic downloading of data from the odorizer.



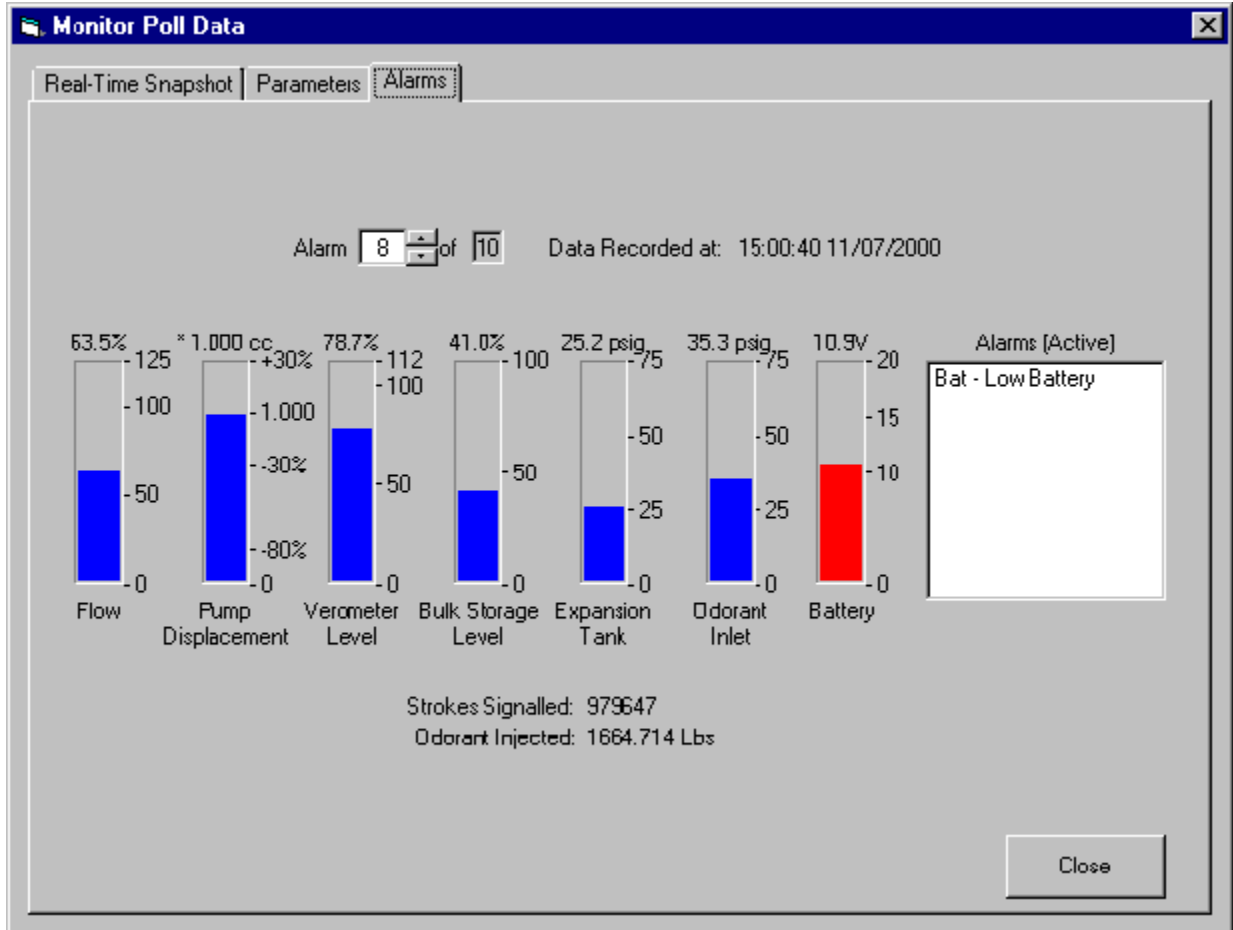
- To view specific information from a poll, double click on that item, and the Monitoring Polled Data screen will appear. There will be a Live View Snap Shot screen, which will show Flow, Pump Displacement, Verometer Level, Bulk Storage Level, Expansion Tank Pressure, Odorant Inlet Pressure, and Battery Voltage. You may also see any alarms that are on at the time listed in the Alarm window, and by clicking on the Parameter Tab, you may view a snap shot of the Parameters at the time of the poll.

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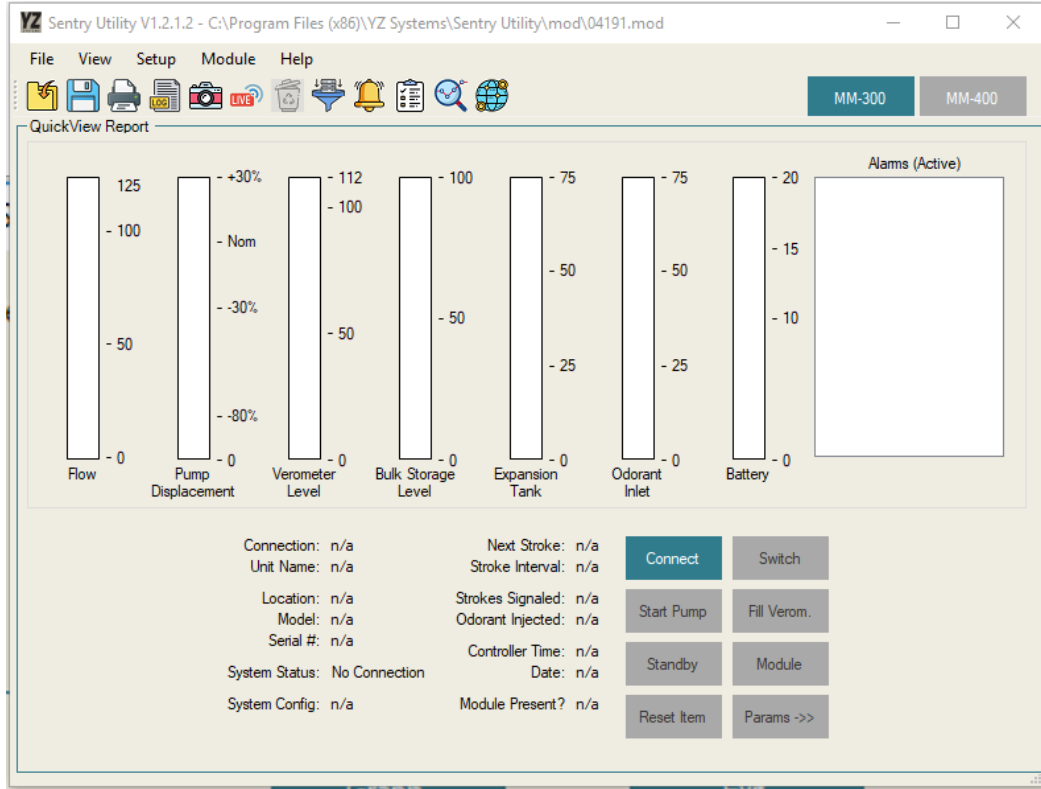
Sentry Utility - NJEX Odorant System Software

6. If the data line that you chose from the Performance Snapshot screen was created by an Automatic Alarm Call in, there will be an additional file tab at the top of the window for Alarms. This tab will allow you to scroll through the most recent previous alarm conditions from this controller.

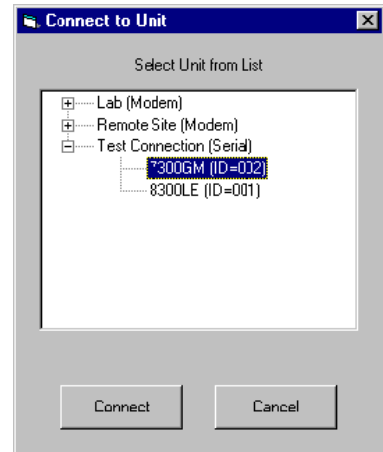


Connecting to a Controller

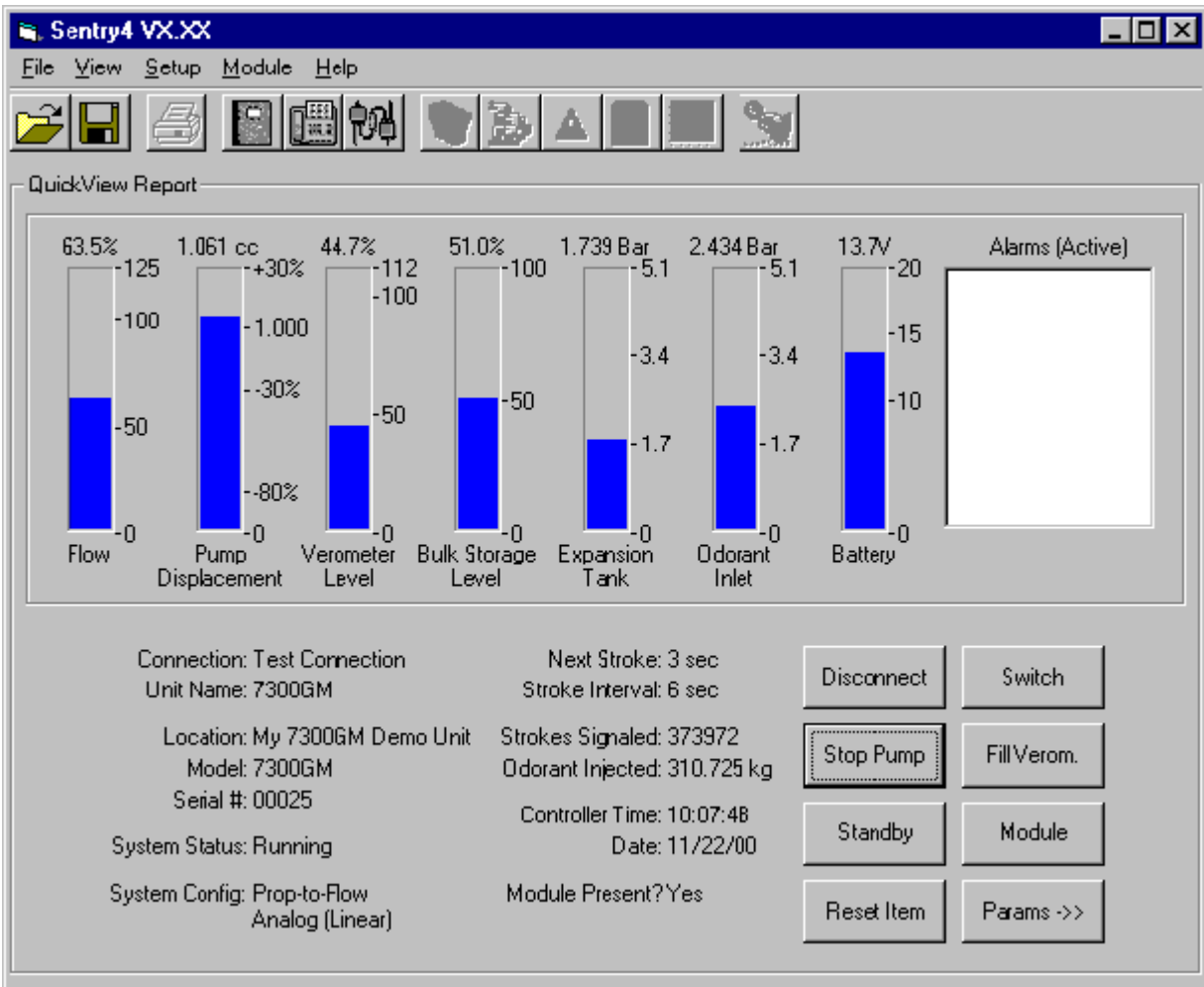
1. Begin by opening Live View Report window. Choose the [View/ Live View Report](#) command from the Menu bar.



2. Now select the CONNECT button.
3. A Connect to Unit screen will appear. Chose the unit that you wish to connect to by double clicking on the connection and unit. Now choose the connect button to actually complete this connection to the odorizer system.
4. The Live View Report screen should appear providing Real Time operational data that is being updated as the odorizer functions. You may view pressures as they change, view the Verometer level as it goes down, then fills again, etc.

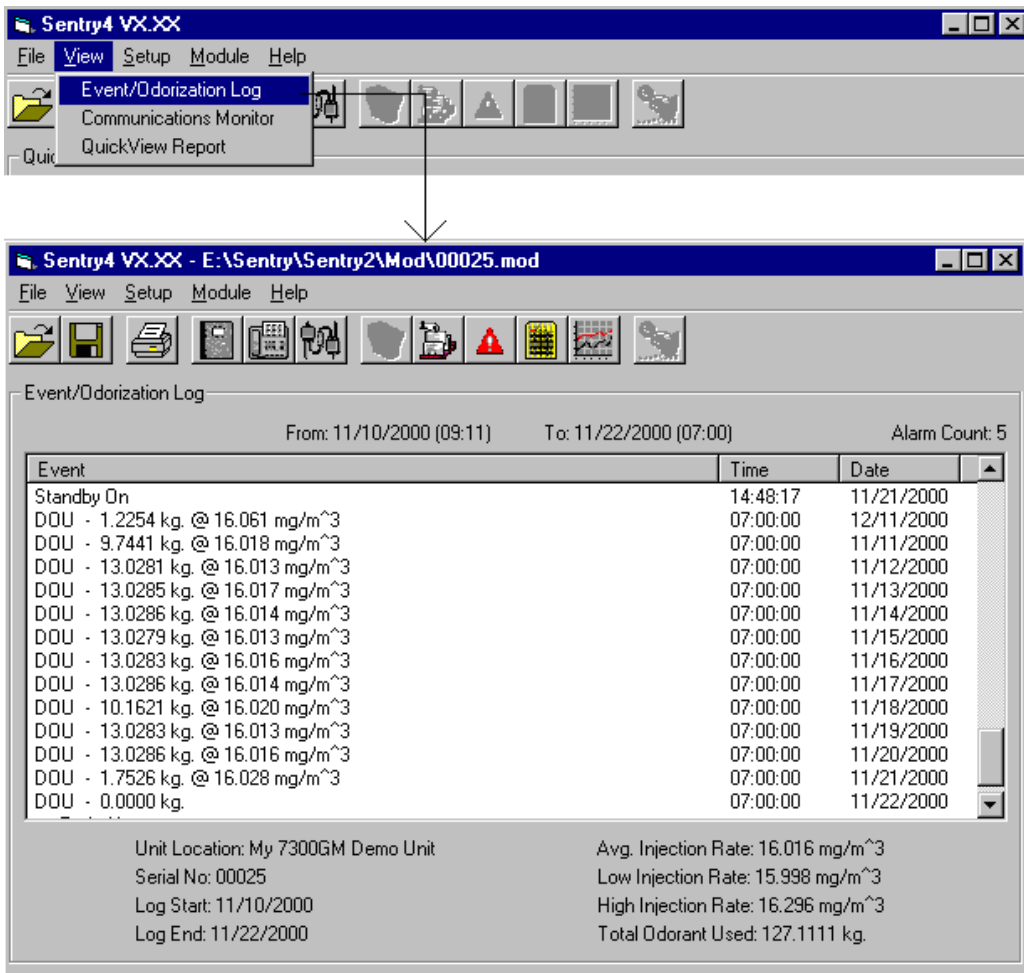
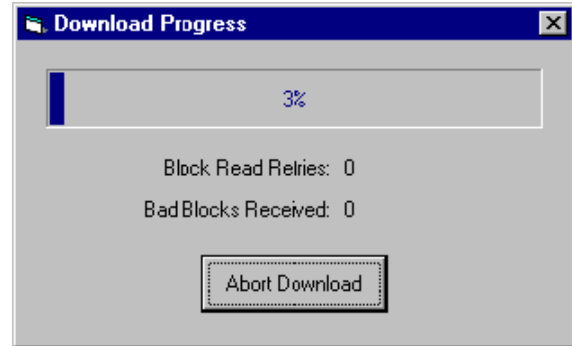
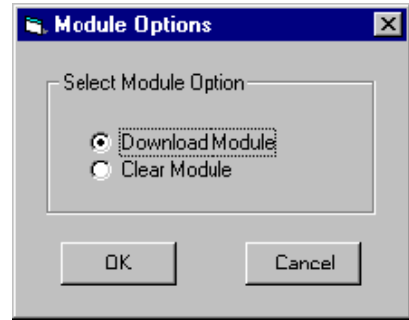


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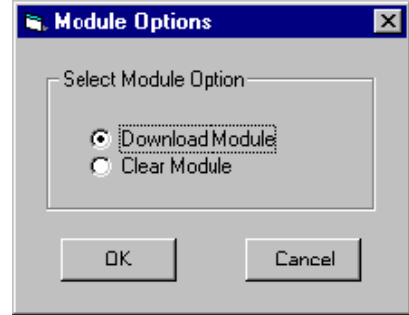
Download Monitor Module

1. Click the "Module" button at the bottom of the Live View Report screen. You must be connected already.
2. Now select "Download Module" and click OK button, the "Download Progress" Window will open and the downloading progress bar should proceed across until the file is 100% downloaded.
3. To view the Mod File, you will have to select [View/Event/Odorization Log](#) from the menu bar at the top of the screen again.
4. You should see the Sentry Utility Event Log now.



Clear Monitor Module

1. Click the "Module" button at the bottom of the Live View Report screen. You must be connected already.
2. Now select "Clear Module" and click OK Unless you get an error message the Memory Module will now be cleared.



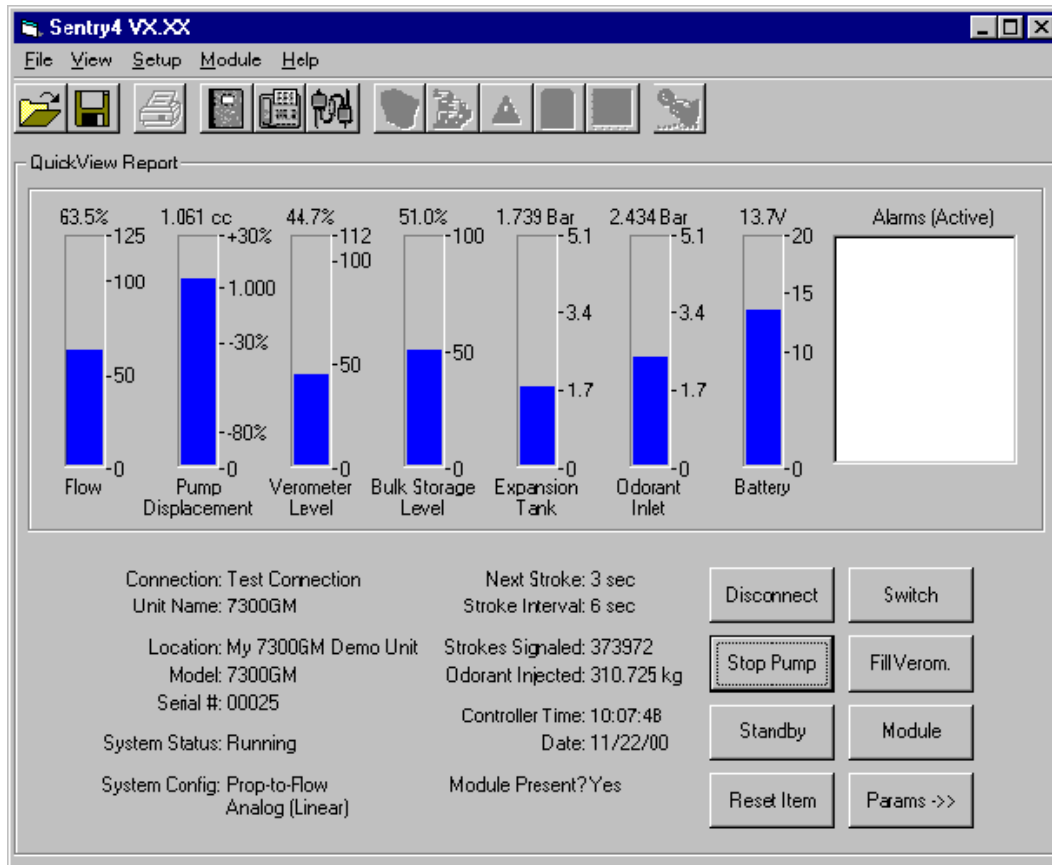
Disconnect

1. Click the "Disconnect" button at the bottom of the Live View Report screen. You must be connected already.

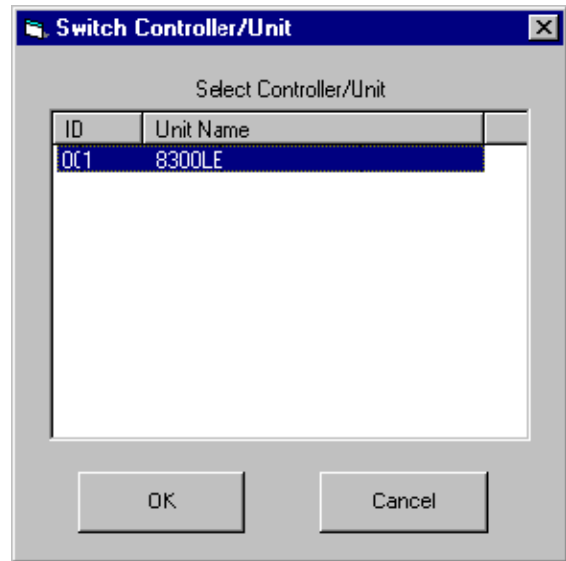
Switch

This allows the option to change the Live View communications link to another unit that has already been setup in the Sentry Utility Communications Set-Up section without breaking the existing connection.

- **Special Note:** If only one controller link was defined for this connection, this screen will not be active.
1. Click the "Disconnect" button at the bottom of the Live View Report screen. You must be connected already.



2. Select the alternate unit to connect to and click the “OK” button at the bottom of the “Switch Controller/Unit” window.
3. After a short time you should now be connected to the new controller.



Standby On

If the system is not currently in Standby, you may put the system into the Standby mode by simply clicking the “Standby” button at the bottom of the Live View Report screen. You must be connected already.

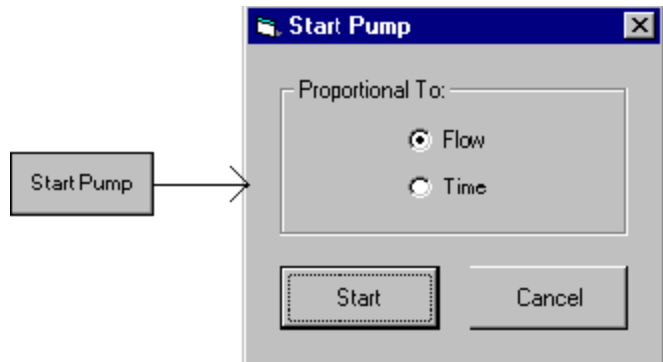
Standby Off

If the system is currently in Standby mode, you may take the system out of Standby by simply clicking the “Exit Standby” button at the bottom of the Live View Report screen. You must be connected already.

Start Pump

If the pump is in the stopped mode, you may remotely start the pump by performing the following steps:

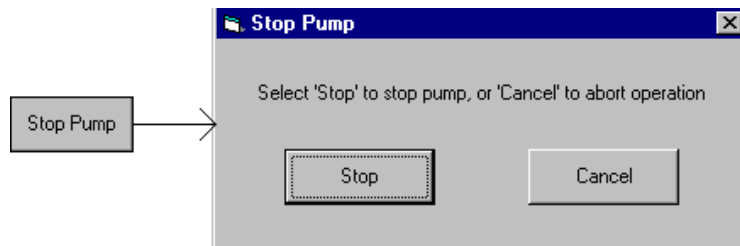
1. Click the "Start Pump" button at the bottom of the Live View Report screen. You must be connected already.
2. Select the proper system run mode and click the “Start” button at the bottom of the “Start Pump” window.



Stop Pump

If the pump is running, you may remotely stop the pump by performing the following steps:

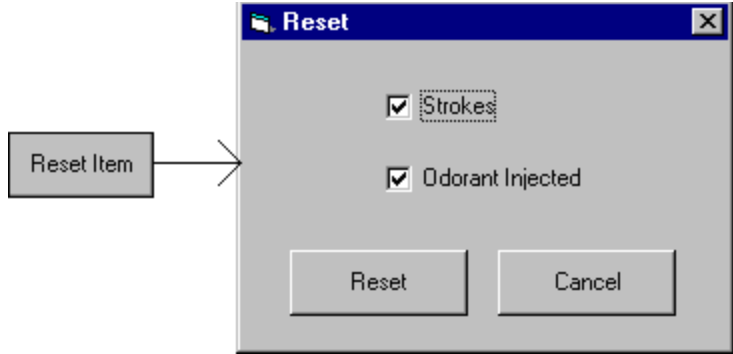
3. Click the "Start Pump" button at the bottom of the Live View Report screen. You must be connected already.
4. Click the “Stop” button at the bottom of the “Stop Pump” window..



Reset Item

You have the options to reset one or both of the resettable data counters in the N-300 controller. To do this, perform the following steps:

1. Click the "Reset Item" button at the bottom of the Live View Report screen. You must be connected already.
2. Check the box or boxes corresponding to the values you wish to reset to zero, then and click the "Reset" button at the bottom of the "Reset" window



Start Verometer Fill Cycle

If the Verometer is not already filling, you may remotely start a Verometer fill by performing the following steps:

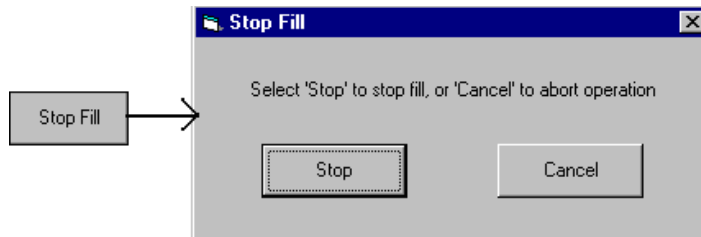
1. Click the "Fill Verom." button at the bottom of the Live View Report screen. You must be connected already.
2. Click the "Start Fill" button at the bottom of the "Fill Verometer" window



Stop Verometer Fill Cycle:

If the Verometer is in the process of filling, you may remote stop the fill process by performing the following steps:

1. Click the "Stop Fill" button at the bottom of the Live View Report screen. You must be connected already.
2. Click the "Stop" button at the bottom of the "Stop Fill" window



Working with Parameters On-Line (N-300 ONLY)

The On-Line Parameter File Editor allows for viewing and/or manipulating a controller's parameter settings while being remotely connected. Following is a summary of the functions that can be performed using this screen.

Accessing

You may view and/or manipulate a controller's parameters on-line by first clicking on the "Params" button at the bottom of the Live View Report screen to bring up the Parameter File Editor. Any parameter may be changed by entering the desired.

The screenshot shows the 'Parameter File Editor' window. On the left, a button labeled 'Params ->>' has an arrow pointing to the 'Parameter Values' section. The 'Unit Type' section shows 'UnitType' set to 7300 and 'Unit Mode' set to GM. The 'Parameter Values' section contains a list of parameters with input fields and units: Injection Rate (16.00 mg/m³), Maximum Gas Flow (15.00 m³/sec), Pump Displacement (1.000 cc/Stroke), Odorant Density (0.815 g/cc), Flow (No signal) (20.0 %), Low Flow Shutoff (2.0 %), Odorant Out Pulse (0.010 kg/pulse), Prop-to-Time Time/Strk (0.02 min/stroke), Max Time/Strk (Disabled min/stroke), Odorant Tank Alarm (High) (90 %), Odorant Tank Alarm (Low) (10 %), Odorant Inlet Alarm (High) (2.80 Bar), Odorant Inlet Alarm (Low) (1.70 Bar), Exp. Tank Alarm (High) (2.00 Bar), and Exp. Tank Alarm (Low) (1.40 Bar). The 'Alarm Control' section has a table with 'Enabled' and 'Disabled' columns. All alarm types (Supply Tank Level Alarm, Signal Alarms, Verometer Alarms, Pump Alarms, Battery Alarm) are checked in the 'Enabled' column. Below this are 'Alarm Contact Delay' and 'Alarm Callout Delay' both set to 0 min, with a note: '(Note: Value>240 = Callout/Contact Disabled)'. 'Dial #1' and 'Dial #2' are both set to 2813511335 and 2813511336 respectively. The 'Ranging/Calibration' section includes input fields for Analog Zero (1.0 V), Analog Span (5.0 V), PPS Span (50 pulse/sec), PPM Span (30 pulse/min), Verometer (154.20 cc), Exp. Tank Zero (1.0 V), and Odorant Inlet Zero (1.0 V). At the bottom, there are buttons for 'Open File', 'Write Params', 'Use Defaults', 'Save File', 'Refresh', and 'Close'.

Open File

Load previously saved PRM file data from PC to the “Parameter File Editor” Window. The data in the “Parameter File Editor” Window can then be modified and/or written over to the controller or saved on the PC as a PRM file.

Save File

Save the data in the “Parameter File Editor” Window to a PRM file.

Write Params

Write the data in the “Parameter File Editor” Window to the controller.

- **Note:** Remember that when parameters are changed in the N-300, the odorizer must then be re-started.

Refresh

Copy the parameters from the controller to the “Parameter File Editor” Window.

- **Note:** This function is necessary only when the parameters are being set directly at the controller while this window is being displayed.

Use Defaults

Allows you the option to reset all parameters to the default set of parameters that were established when the N-300 was manufactured.

Close

Close the Parameter File Editor screen.