GX-2009 User Setup Program Operator's Manual

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Warranty

RKI Instruments, Inc., warrants gas alarm equipment sold by us to be free from defects in materials and workmanship, and performance for a period of one year from date of shipment from RKI Instruments, Inc. Any parts found defective within that period will be repaired or replaced, at our option, free of charge. This warranty does not apply to those items which by their nature are subject to deterioration or consumption in normal service, and which must be cleaned, repaired, or replaced on a routine basis. Examples of such items are:

Absorbent cartridges   Batteries

Pump diaphragms and valves   Filter elements

Fuses

Warranty is voided by abuse including mechanical damage, alteration, rough handling, or repairs procedures not in accordance with the instruction manual. This warranty indicates the full extent of our liability, and we are not responsible for removal or replacement costs, local repair costs, transportation costs, or contingent expenses incurred without our prior approval.

This warranty is expressly in lieu of any and all other warranties and representations, expressed or implied, and all other obligations or liabilities on the part of RKI Instruments, Inc., including but not limited to the warranty of merchantability or fitness for a particular purpose. In no event shall RKI Instruments, Inc., be liable for indirect, incidental, or consequential loss or damage of any kind connected with the use of its products or failure of its products to function or operate properly.

This warranty covers instruments and parts sold to users only by authorized distributors, dealers, and representatives as appointed by RKI Instruments, Inc.

We do not assume indemnification for any accident or damage caused by the operation of this gas monitor and our warranty is limited to replacement of parts or our complete goods.

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Introduction

CAUTION: *Read and understand this manual before using the GX-2009 User Setup Program. Also read and understand the GX-2009 Operator's Manual included with the GX-2009 portable gas monitor.*

Using an advanced detection system consisting of up to four gas sensors, the GX-2009 Personal Gas Monitor detects the presence of combustible gases, oxygen (O_2), carbon monoxide (CO), and hydrogen sulfide (H_2S) simultaneously. The GX-2009's compact size and easy-to-use design make it ideally suited for a wide range of applications as described in the GX-2009 Operator's Manual. Please read the GX-2009 Operator's Manual first before using the GX-2009 User Setup Program.

The GX-2009 User Setup Program allows you to change various instrument parameters not accessible in the GX-2009's Calibration Mode or User Setup Mode. It also allows you to save parameter configuration files based on instruments' parameter settings that can be viewed or used to update another instrument's parameter settings

The purpose of this manual is to explain how to use the GX-2009 User Setup Program. You will learn how to:

- install and launch the program

- install the downloading cable (if needed)

- connect to the GX-2009 with the program

- change parameters in the GX-2009

- save parameter configuration files that can be opened and viewed in a spread sheet program

- save parameter configuration files that can be uploaded to an instrument to change its parameter settings

- upload parameter configuration files to an instrument to change its parameter settings

Before you get started, be sure to review system requirements in the next section.

CAUTION: *The GX-2009 detects oxygen deficiency and elevated levels of oxygen, combustible gases, carbon monoxide, and hydrogen sulfide, all of which can be dangerous or life threatening. When using the GX-2009, you must follow the instructions and warnings in the GX-2009 Operator's Manual to assure proper and safe operation of the unit and to minimize the risk of personal injury.*

CAUTION: *The operator of this instrument is advised that if the equipment is used in a manner not specified in this manual, the protection provided by the equipment may be impaired.*

System Requirements

To use the GX-2009 Data Logging Software, your personal computer must meet the following requirements:

- **Operating Systems:** Windows® 2000, Windows® XP, or Windows® Vista.

- **Processor:** IBM® compatible PC running Pentium® 2 or higher.

- **Memory:** 32 MB RAM minimum

- **Available Hard Disk Space:** 32 MB minimum

- **CD-ROM Drive**

- **Infrared port** or **USB port and a USB/IrDA adapter cable**

Installing the GX-2009 User Setup Program

1. Launch Windows®.

2. Exit from all applications and open windows.

3. Insert the GX-2009 User Setup Program Installation CD in your computer's CD-ROM drive.

NOTE: If you have a GX-2009 Product CD instead of a GX-2009 User Setup Program Installation CD, insert the Product CD and navigate to the User Setup folder. When you open the folder, double click on **setup.exe**, then continue with step 4.

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4. After a few seconds, a screen appears indicating that the InstallShield Wizard is preparing to install the User Setup Program, then the GX-2009 Configuration for User InstallShield Wizard window appears to guide you through installation.

Figure 1: GX-2009 User Setup Installation Program

5. Follow the on-screen instructions in the Installation Wizard Window to install the program.

6. If the InstallShield Wizard finds versions of Windows® files on your computer newer than those in the installation CD, it will ask you if you want to keep these newer files. Click **Yes**.

7. When the InstallShield Wizard indicates that installation is complete, click the **Finish** button.

8. Eject the installation CD from the CD-ROM drive and store it in a safe place.

IrDA Downloading Cable

The GX-2009 communicates with a computer via an on-board infrared communication port that complies with IrDA protocol standards.

NOTE: If your computer has a built-in infrared port, you do not need an adapter cable to download data.

If your computer does not have an infrared port, you will need to install an IrDA/USB adapter cable on your computer to use the GX-2009 User Setup Program with your GX-2009. The IrDA/USB cable is available from RKI Instruments, Inc. See the Spare Parts List at the end of this manual for the RKI part number. This cable can also be found in many electronic supply stores and computer stores.

Some versions of Windows® already have several infrared device drivers loaded in Windows® and will automatically recognize a cable during the installation process and guide you in installing the drivers. Other versions of Windows® will require you to load device drivers provided by the manufacturer of the cable during the installation process. RKI makes no warranty for the operation or compatibility of the drivers with any particular device.

Installing an IrDA Adapter Cable

After installing the GX-2009 User Setup Program, connect the IrDA/USB cable to your computer and follow the manufacturer's instructions for installing the cable on your computer. Make sure the cable is compatible with your Windows® operating system.

If you do not have instructions from the cable manufacturer for installing your cable, see your Windows documentation. In general, you must go to the Control Panel and use the Add Hardware Wizard to install the cable drivers.

Windows® Wireless Link Operation Note

When using an IrDA adapter cable and the GX-2009 User Setup Program on a Windows® computer, it is necessary to make a special setting in the Wireless Link Configuration window for proper communication between the GX-2009 and the GX-2009 User Setup Program. This must be done before attempting to use the program. Follow these steps to make this setting:

1. Click **Start** on the Windows® Icon Tray.

2. If **Control Panel** is available to select in the **Start** menu, select it. The Control Panel will appear.

   If **Control Pane**l is not selectable in the Start menu but **Settings** is, select **Settings**, then select **Control Panel**. The Control Panel will appear.

3. Double click on **Wireless Link**. The Wireless Link Configuration window will appear.

4. Click on the Image Transfer tab.

5. Deselect the selection box for "Use Wireless Link to transfer images from a digital camera to your computer."
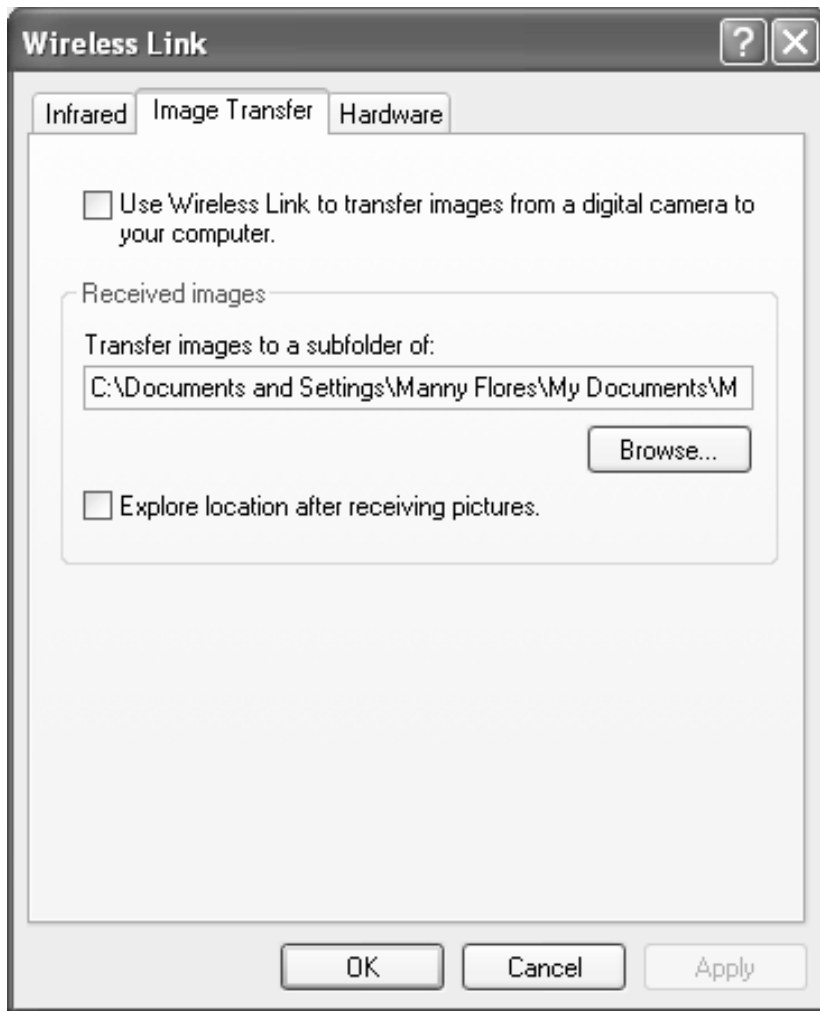
Figure 2: Image Transfer Tab

6. Click **OK**.

7. Close the Control Panel window.

Launching the Program

1. Click **Start** in the Windows$^{®}$ Icon Tray, then select **Programs**, then select **GX-2009 Configuration for User**. Your operating system may also have a shortcut installed in the **Start** menu.

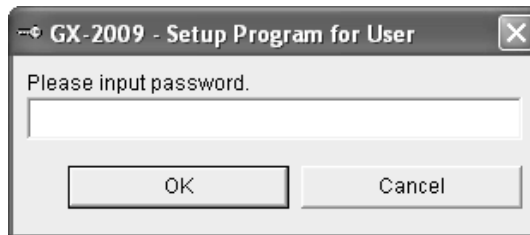2. The program will launch and the Password Window will appear.

Figure 3: The Main Window

3. The password to enter the User Setup Program is "1994". Type in the password and click **OK** to proceed.
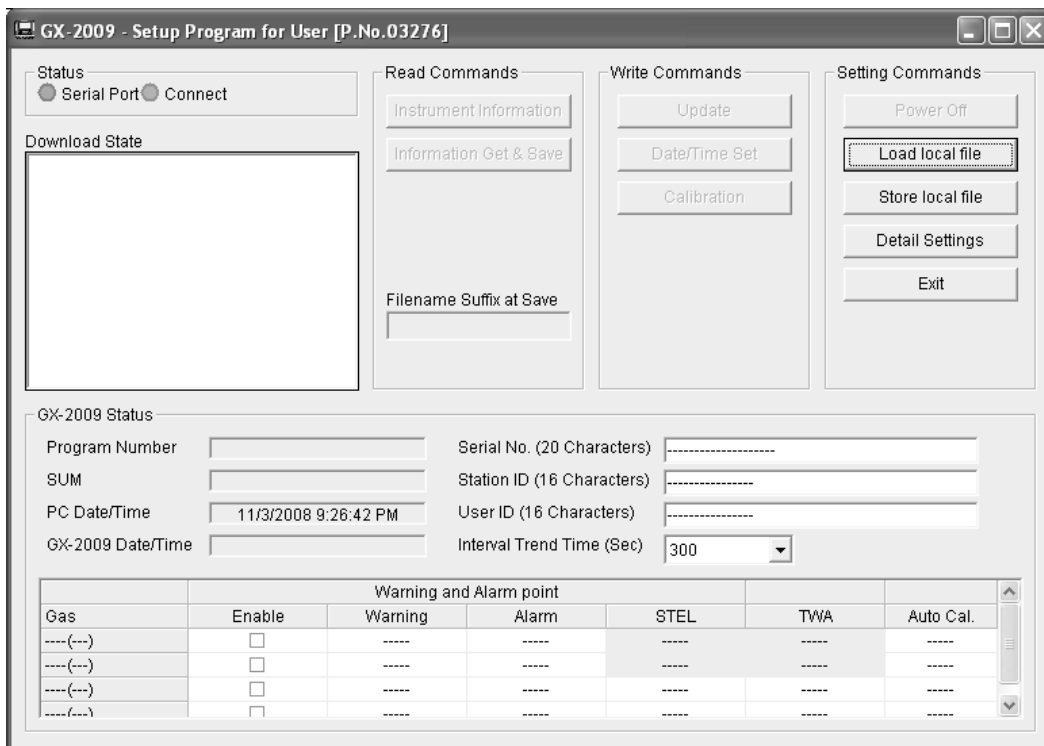
4. The Main Window will appear.

Figure 4: The Main Window

5. For convenience, make a shortcut of the GX-2009 User Setup Program and place it on the Windows® desktop. See your Windows® documentation for information about making shortcuts.

Connecting a GX-2009 to the User Setup Program

Follow these steps to connect a GX-2009 to the User Setup Program:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10. The Main Window displays.
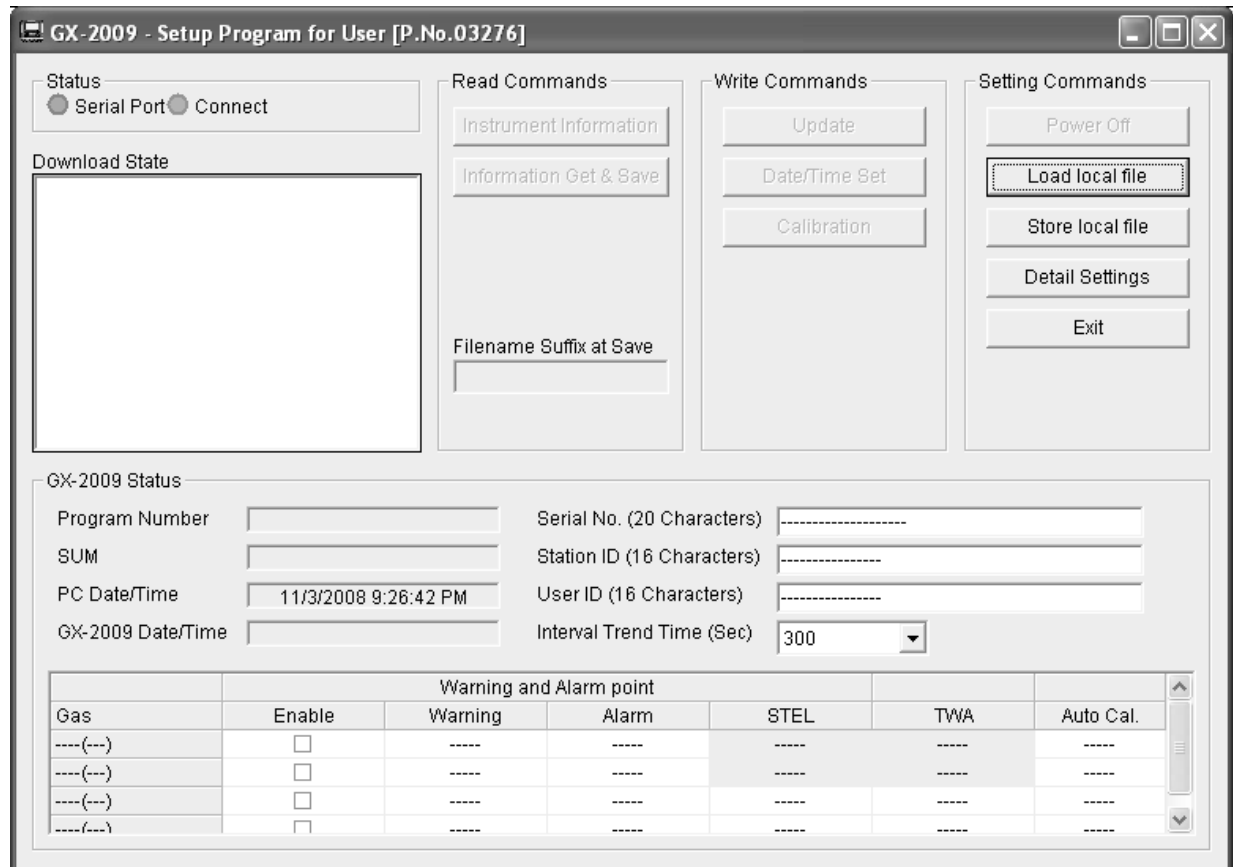

Figure 5: The Main Window

2. Place the GX-2009 within an inch or two of the infrared port on your computer aligning the infrared port on the top of the GX-2009 with the infrared port on your computer.

If your computer does not have a built in infrared port, place the GX-2009 within an inch or two of the infrared port on the IrDA adapter cable as shown in Figure 6 below, aligning the infrared port on the top of the GX-2009 with the infrared port on the cable.
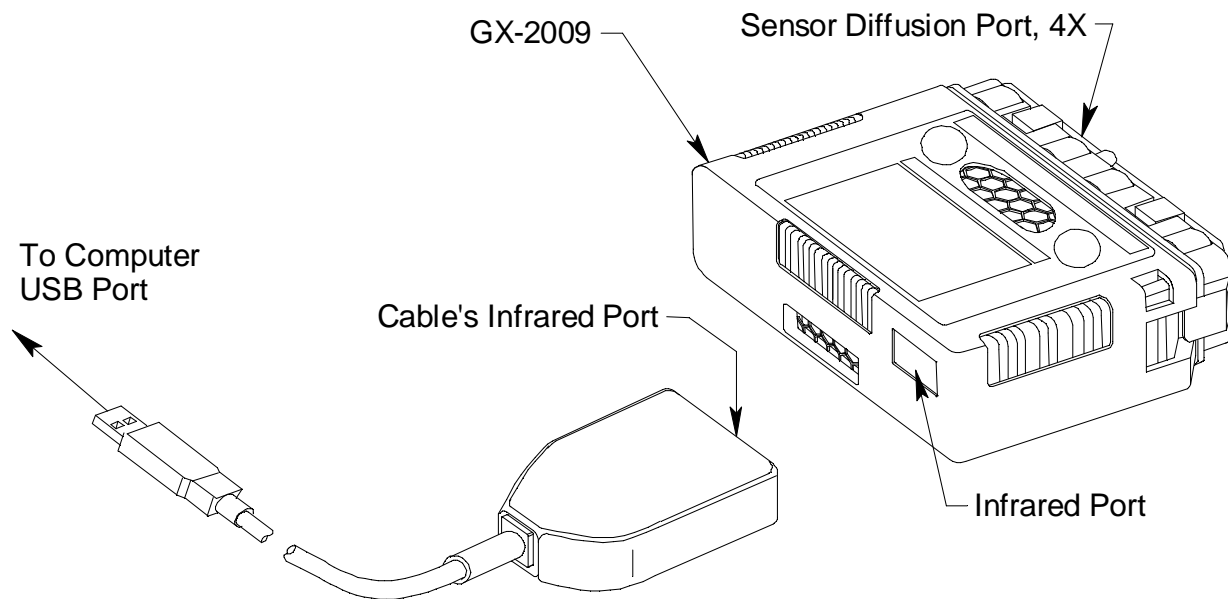

Figure 6: Aligning the GX-2009 with the Cable Infrared Port

3. Press and hold the POWER MODE button on the GX-2009 until you hear a beep, then release it. The GX-2009 will begin it's power up sequence (see exceptions below in step 4). If a successful connection between the GX-2009 and the computer occurs, the Connect Light in the

Figure 7: Connection Message

Status area turns green after a few seconds and "GX-2009 . . . Connection Successful." displays in the Download State area. The following screen will appear on the GX-2009 display and The Windows® icon tray will
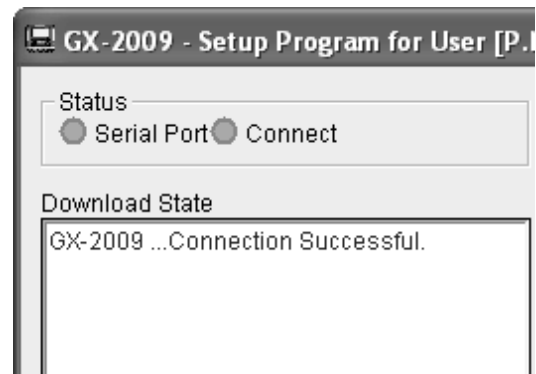
indicate that a wireless connection is in effect.

> *PC*
>
> ⬛*TRANSMIT*

4. There are two exceptions to the sequence described in step 3 above. See "Detail Settings" on page 37 for a description of the **Cal Limit Display** and **Cal Limit Check** parameters.

- When **Cal Limit Display** is set to *On* and **Cal. Limit Check** is set to *Can't Use*, if the GX-2009 is due for calibration the instrument will show a calibration expired failure screen and the buzzer and LED arrays will pulse for a few seconds and before connecting to the program. The failure screen will remain on the display while the unit is connected to the program. You can still use the User Setup Program with an instrument if this failure indication occurs.

> *FAIL*
>
> ⬛*C-LIMIT*
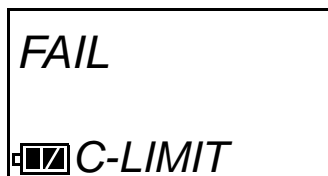
- When **Cal Limit Display** is set to *On* and **Cal. Limit Check** is set to *Confirm to use*, if the GX-2009 is due for calibration the unit will show the following screen and beep and flash the LED arrays for a few seconds indicating that calibration is due.

> *CAL*
>
> ⬛*C--LIMIT*

  When the beeping and flashing stops, press and release the POWER MODE button on the GX-2009 to continue. The unit will now connect to the program and the PC TRANSMIT screen will be displayed.

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You can now retrieve the connected instrument's configuration information using either the **Instrument Information** or the **Information Get & Save** command button as described in "Instrument Information" on page 15 and "Information Get & Save" on page 18. You must retrieve the connected instrument's configuration information before you can perform some operations such as saving the instrument's parameter configuration to a file and changing the instruments parameter configuration. The three basic command sets for performing these operations are the Read Commands, Write Commands, and Setting Commands. These command sets are described in the sections that follow.

Read Commands

Use the Read Commands to retrieve parameter configuration information from a GX-2009 so the program knows which instrument is connected to it and to save several of the instrument's parameter settings and most recent calibration information to a **.csv** (comma separated value) file. The two Read Commands are **Instrument Information** and **Information Get & Save**.
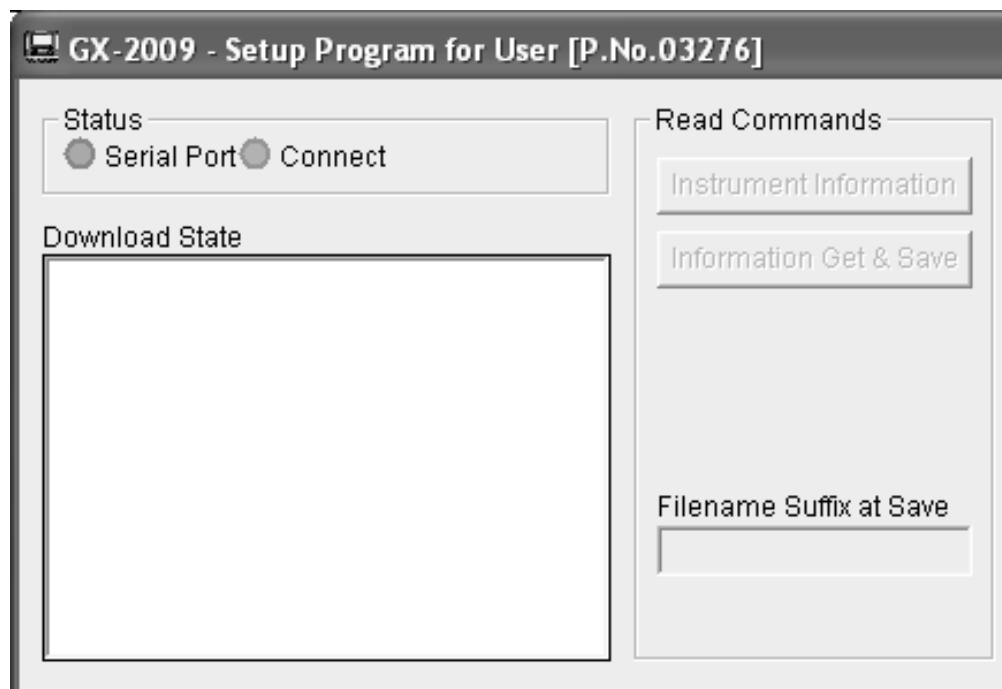

Figure 8: Read Commands, Blanked Out

When the User Setup Program is first launched, the Read Command control buttons are blanked out. They become active when an instrument is connected to the program.
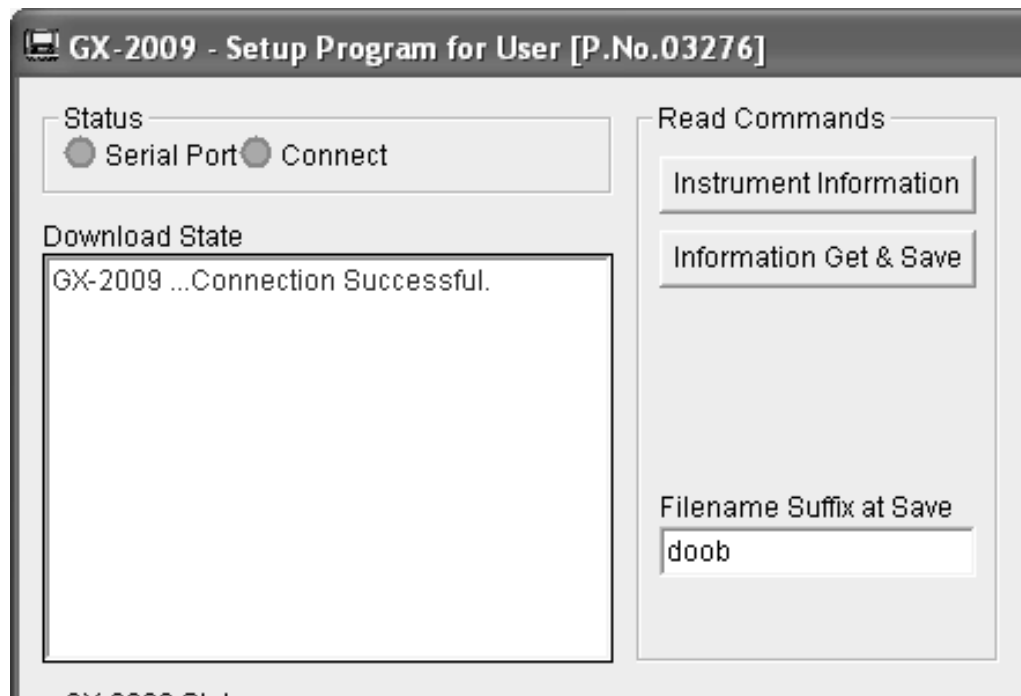

Figure 9: Read Commands, Active

Instrument Information

Use **Instrument Information** to load a connected instrument's parameter configuration into the User Setup Program so it can be updated if desired. Follow these steps to retrieve a connected instrument's parameter configuration and update parameters that are available in the GX-2009 Status area:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

3. With the Read Command Buttons now active, click **Instrument Information** to retrieve the instrument's parameter configuration**.** The program indicates that it is

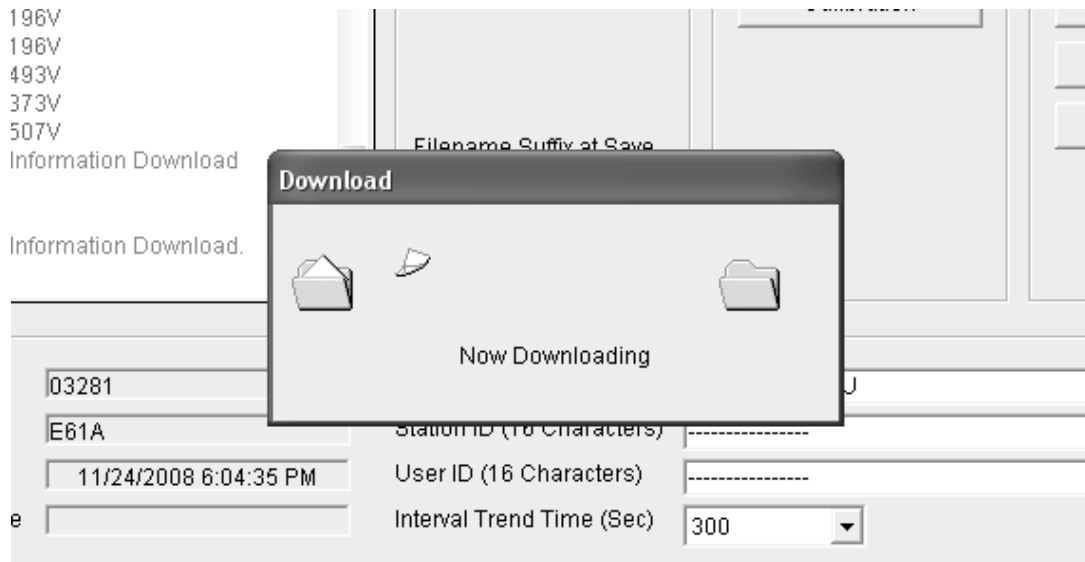downloading information from the instrument.

Figure 10: Instrument Information Downloading

4. The instrument's parameter configuration is now loaded in the User Setup Program and parameters are available for updating in the GX-2009 Status area of the Main Window and in the Factory Settings Window. The Factory Settings Window is accessed using the **Detail Settings** command button in Setting Commands. See "Detail Settings" on page 37 for a description of **Detail Settings**.

5. Various parameters are available for updating in the GX-2009 Status area. The fields for these parameters are white. Items in grey fields such as the Program Number and SUM cannot be edited. The following items can be changed:

- Serial No., Station ID, and User ID
  Click in the field and type in the desired string.

- Interval Trend Time
  Click in the field. A drop down menu will appear. Select the desired value.

- Alarm Points & Auto Cal. Value
  Double click in the field and type in the desired setting.

- Enable Status
  Click in an enable selection box to select or deselect the

box. If the box is selected, the corresponding channel will be enabled when the change is uploaded to a GX-2009. If the box is deselected, the corresponding channel will be disabled when the change is uploaded.

6. Once you have made the desired parameter edits, click **Update** in the Write Commands.The following window appears prompting you to confirm that you want to make the update.
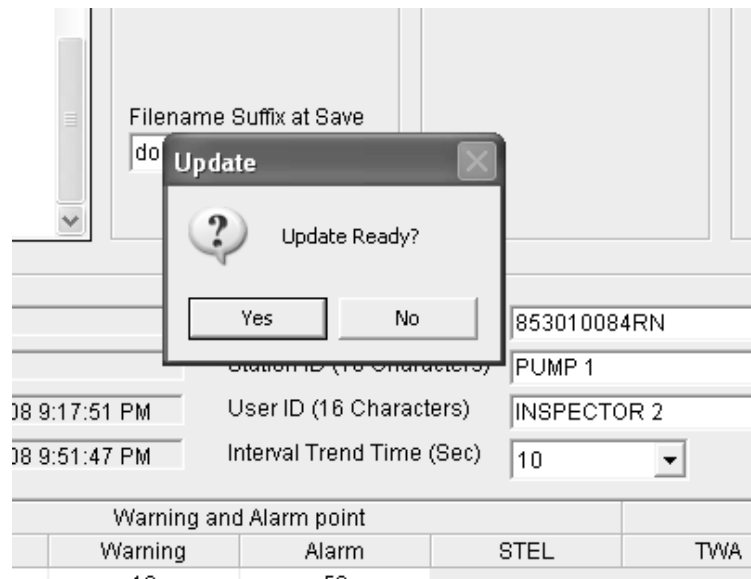

Figure 11: Update Window

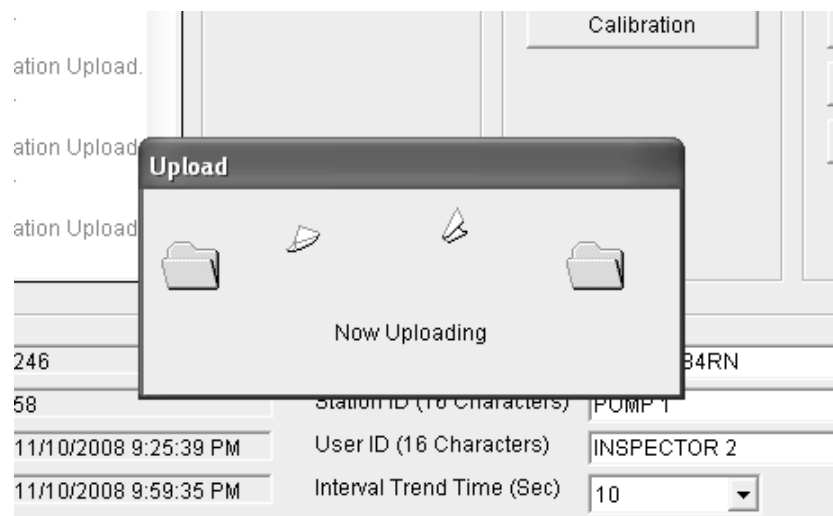7. Click **Yes** to proceed. The program will indicate that it is uploading information to the GX-2009.

Figure 12: Upload Window

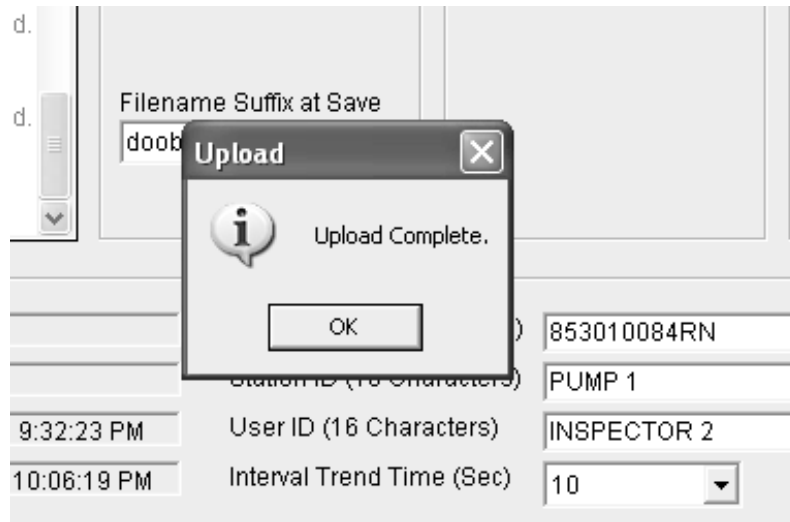8. When the uploading is complete, the program will indicate that it is done.

Figure 13: Upload Complete Window

9. Click **OK**. The program will return to the Main Window.

Information Get & Save

Use **Information Get & Save** to load a connected instrument's parameter configuration into the User Setup Program and edit parameters, just like **Instrument Information**. In addition, you can save an instrument's parameter configuration and most recent calibration information to a **.csv** (comma separated value) file which can be opened with a spread sheet application such as Microsoft Excel. Follow these steps to retrieve a connected instrument's parameter configuration, update parameters in the GX-2009 Status area, and save the parameter information and most recent calibration information to a **.csv** file:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect a GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11. The Read Command buttons are now active and the Filename Suffix at Save field is available for entering a filename suffix.

3. Click in the Filename Suffix at Save field and enter a file name suffix. When you use **Instrument Get & Save**, the program saves a connected instrument's parameter configuration and most recent calibration information to a **.csv** file with the file name "GX2009_Setting[suffix].csv". You can add the instrument's parameter configuration to an existing file or create a new file by using the Filename Suffix at Save field. The entered suffix is added to the end of the filename, before the file extension. If you do not type in a suffix, then the program will save the parameter configuration to the file "GX2009_Setting.csv". If the filename corresponds to an existing file, the program will add a connected instrument's parameter configuration to the file. If the filename does not exist, the program will create a new file and save the instrument's parameter configuration to it. The suffix allows you to differentiate the **.csv** files from one another, such as between different instruments or between different downloads of the same instrument. The file that the instrument's parameter configuration is saved to by **Instrument Get & Save** is located in the User Setup Program's folder on the computer's C drive. The file path is *C:\Program Files\GX-2009UserConfig\GX2009_Setting [suffix].csv.*

4. Click **Information Get & Save**. The program indicates that it is downloading information from the instrument.
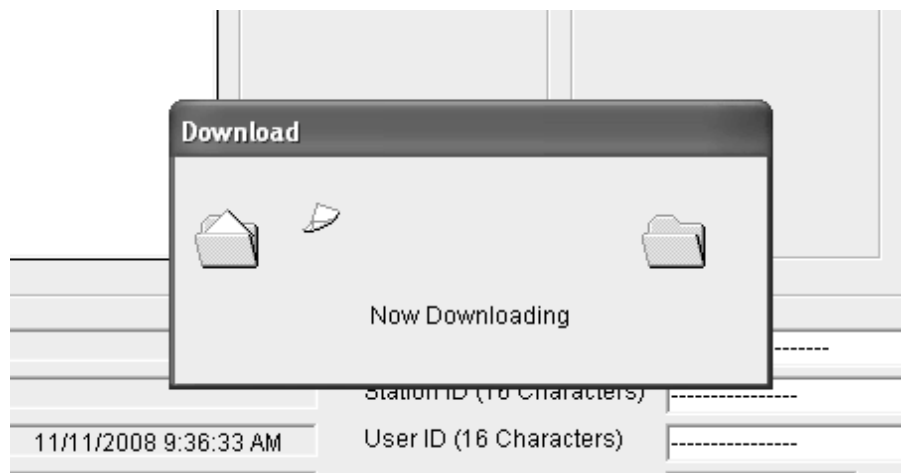

Figure 14: Information Get & Save Downloading

5. The program will retrieve the instrument's parameter configuration and most recent calibration information then add them to an existing **.csv** file or save a new **.csv** file with the instrument's parameter configuration and most recent calibration information as described in step 3 above.

6. Use a spreadsheet program such as Microsoft Excel to open and view the saved **.csv** files.

7. The instrument's parameter configuration is now loaded in the User Setup Program and the parameters are available for updating in the GX-2009 Status area of the Main Window and in the Factory Settings Window. The Factory Settings Window is accessed using the **Detail Settings** command button in Setting Commands. See "Detail Settings" on page 37 for a description of **Detail Settings**.

8. See step 5 through step 9 in "Instrument Information" on page 15 for instructions to update parameters in the GX-2009 Status area of the Main Window.

Write Commands

Use the Write Commands to upload parameter changes and calibration adjustments to a connected instrument.The three Write Commands are **Update**, **Date/Time Set**, and **Calibration**.
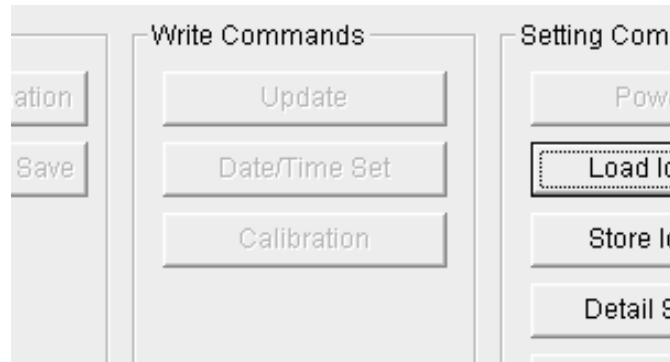

Figure 15: Write Commands, Blanked Out

When the User Setup program is first launched, the Write Command control buttons are blanked out. They become active when an instrument is connected to the program.

Figure 16: Write Commands, Active

Update

Use **Update** to upload changes that have been made to parameters in the GX-2009 Status Area of the Main Window or in the in the Factory Settings Window. The Factory Settings Window is accessed using the **Detail Settings** command button in Setting Commands. See "Detail Settings" on page 37 for a description of **Detail Settings**. When you click Update, any changes that have been made to a connected instrument's parameters will be uploaded to the instrument. The use of **Update** at the appropriate time is described in various other

sections in this manual.

Date/Time Set

Use **Date/Time Set** to update the date and time in a connected instrument to match the computer's date and time. Follow these steps to update an instrument's date and time:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

NOTE: It is not necessary to use **Instrument Information** or **Instrument Get & Save** in order to update the date and time. Although it is not necessary to use I**nstrument Information** or **Instrument Get & Save** before updating the instrument's date and time, you can update the date and time after using either of these commands if desired.

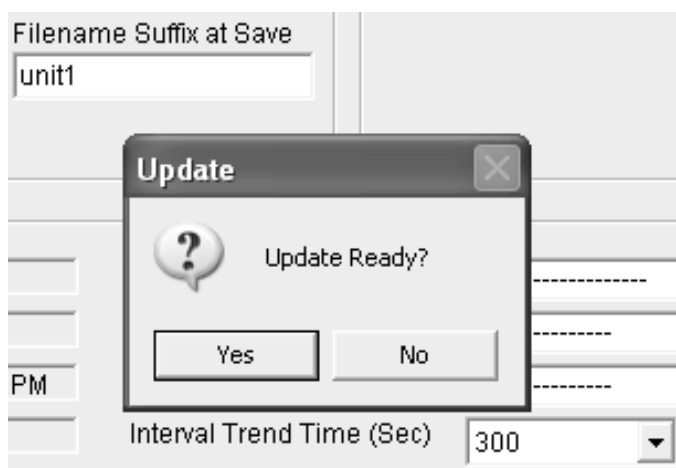3. Click **Date/Time Set**. The following window will appear.

Figure 17: Update Window

4. Click **Yes**. The program will update the instrument's date and time to match the computer's, then display the following
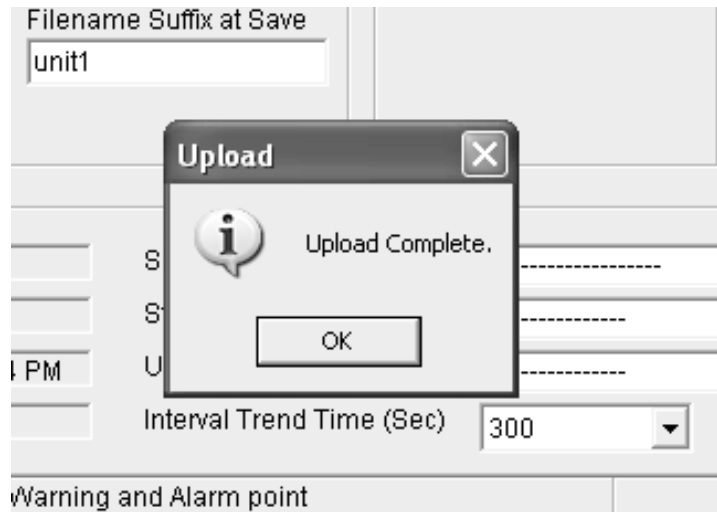
window.

Figure 18: Upload Complete Window

5. Click **OK**. The program will return to the Main Window.

Calibration

Use **Calibration** to calibrate an instrument by adjusting the instrument's zero (fresh air) and span settings. Performing a span adjustment requires the use of a calibration kit. The procedure below describes a span adjustment of all four channels using a calibration kit that includes a 4-gas calibration cylinder, a 0.5 LPM (liters per minute) regulator, a calibration adapter plate, and non-absorbent sample tubing. The standard 4-gas cylinder consists of 50% LEL methane, 12% oxygen, 25 ppm H2S, 50 ppm CO, and a balance of nitrogen. If the H2S channel on your GX-2009 is active, then use a 4-gas cylinder. If the H2S channel on your GX-2009 is not active, you may use a 3-gas cylinder to adjust the span. The standard 3-gas cylinder consists of 50% LEL methane, 12% oxygen, 50 ppm CO, and a balance of nitrogen. See "Spare Parts List" on page 44 for available calibration kits and calibration kit spare parts.

The area where you perform the calibration must be a fresh air environment, an environment of normal oxygen content (20.9%) that is free of toxic and combustible gases. Typical desktop computer locations such as an office or laboratory are fresh air environments, but if you are in the field using a laptop to calibrate an instrument, be sure to confirm that the area is a fresh air environment.

Follow these steps to calibrate an instrument:

1. Confirm that the area where you will perform the calibration is a fresh air environment.

2. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

3. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

NOTE: It is not necessary to use **Instrument Information** or **Instrument Get & Save** in order to perform a calibration. Although it is not necessary to use I**nstrument Information** or **Instrument Get & Save** before performing a calibration, you can perform a calibration after using these either of these commands if desired.

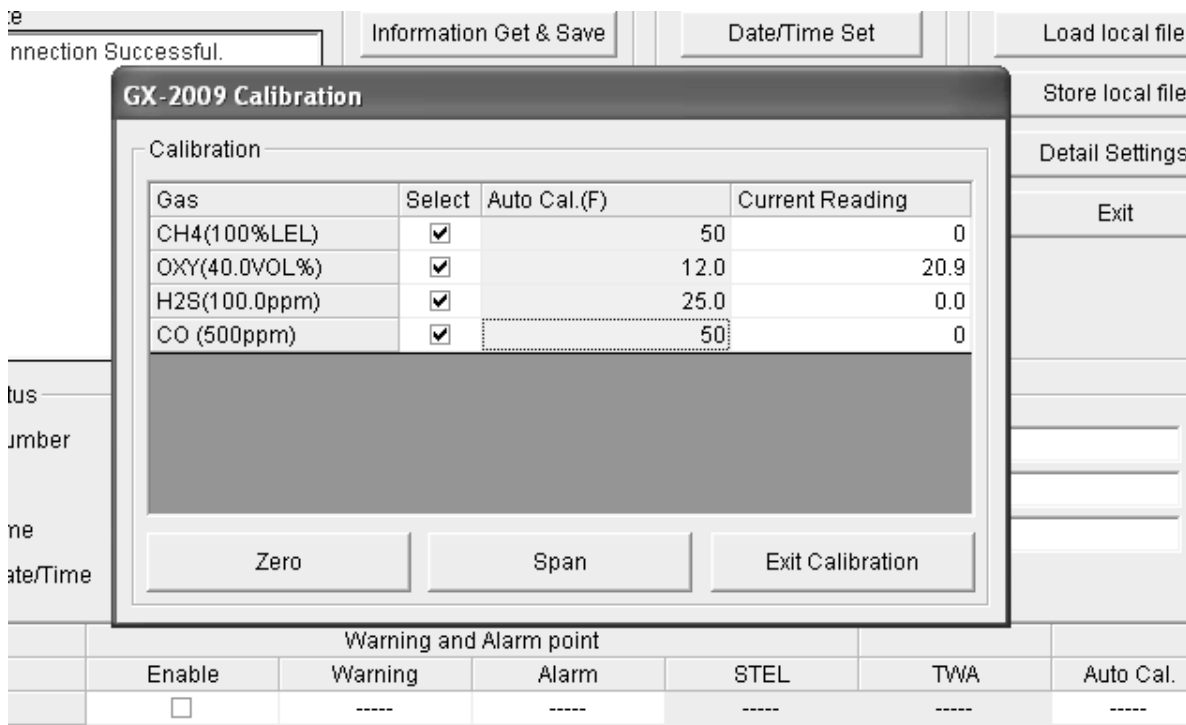4. Click **Calibration**. The GX-2009 Calibration Window will appear.

Figure 19: GX-2009 Calibration Window

There are four column headings and three control buttons in the GX-2009 Calibration Window.

- Gas
  The Gas column shows the four detection channels, the target gas for each channel, and the detection range full scale value for each channel.

- Select
  The Select column has a selection box for each channel that allows you to select or deselect a channel for zero and span adjustments.

- Auto Cal.
  The Auto Cal. column displays the auto calibration values for each channel. These values are retrieved from an instrument when a connection is established. They cannot be changed in the Calibration Window.

- Current Reading
  The Current Reading column displays the current real time gas reading for each channel.

- **Zero** Button
  Click **Zero** at the appropriate time to perform a zero (fresh air) adjustment on the instrument's selected channels.

- **Span** Button
  Click **Span** at the appropriate time to perform a span adjustment on the instrument's selected channels.

- **Exit Calibration** Button
  Click **Exit Calibration** to close the GX-2009 Calibration Window and return to the Main Window.

5. Click **Zero**. The program will take a few seconds to adjust the instrument's zero (fresh air) settings. The Adjusting Zero Window will appear during this period.
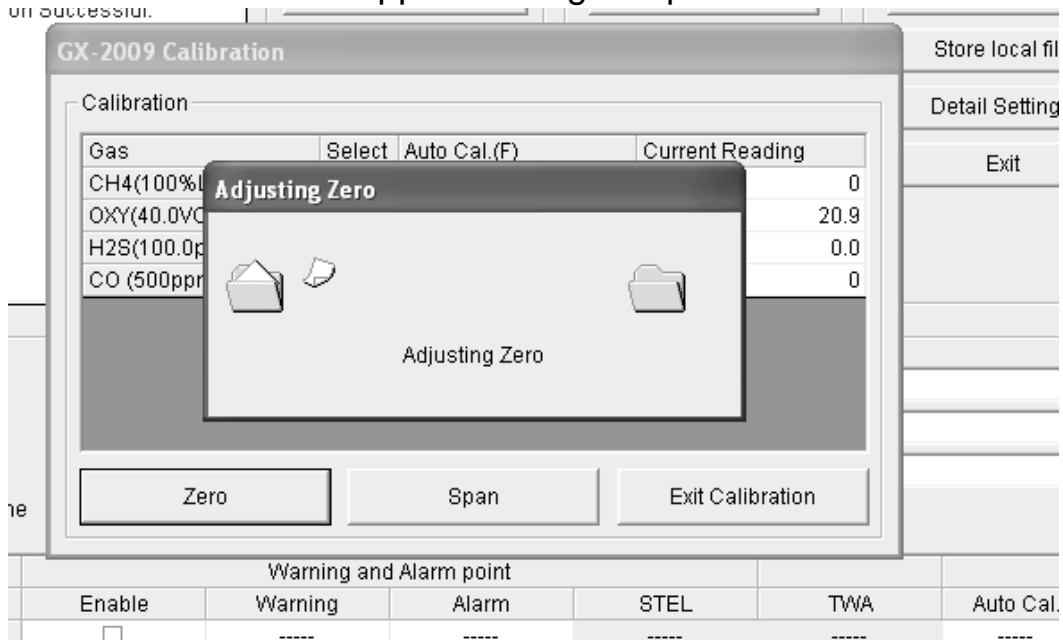

Figure 20: Adjusting Zero Window

6. When the zero adjustment is complete, the Adjustment Complete Window will indicate that the adjustment was completed for each channel if it was successful. Click **OK** to return to the Calibration window.
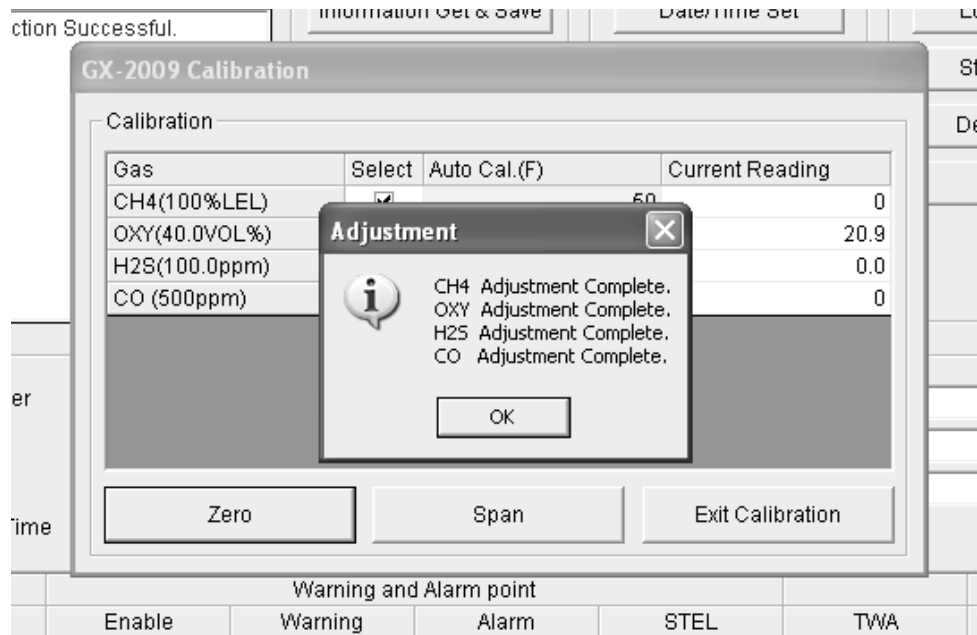

Figure 21: Adjustment Complete Window, Zero

If any of the channels failed the zero adjustment, the message in the Adjustment Window for that channel will indicate that the zero adjustment failed. Click **OK** to return to the Calibration Window. See the GX-2009 Operator's Manual for troubleshooting suggestions.

7. Use the calibration kit sample tubing to connect the calibration adapter plate to the regulator. Attach the tubing to the adapter plate on the inlet side as shown below in Figure 22.
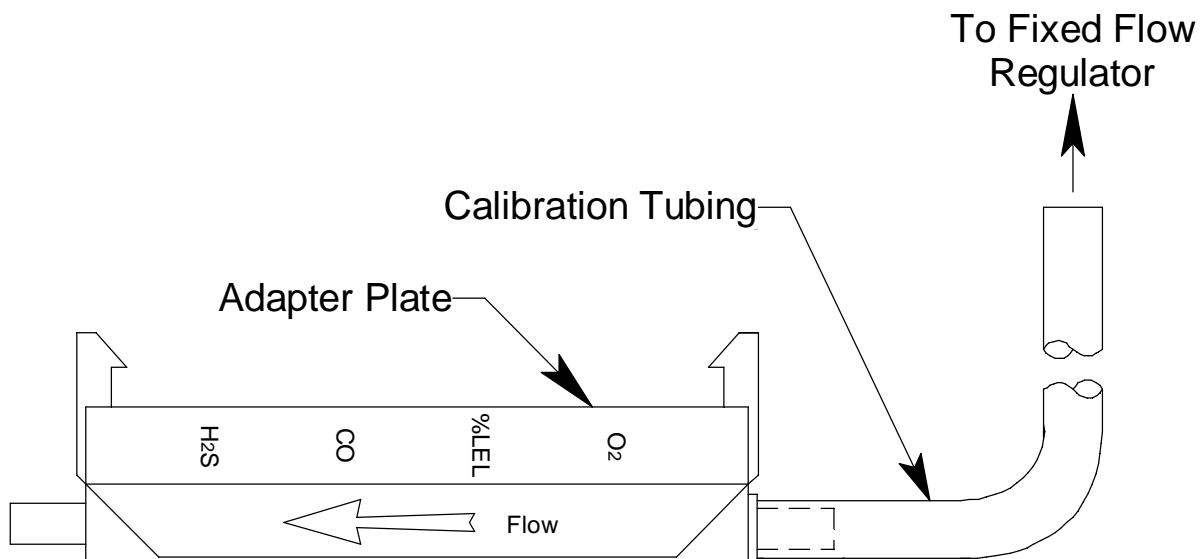

Figure 22: Calibration Kit Assembly

8. Confirm that the regulator on/off knob is turned all the way clockwise (closed) and screw the calibration gas cylinder onto the regulator.

9. Hold the GX-2009 in place with one hand while pushing the adapter plate onto the GX-2009's sensor face with the other to avoid moving the GX-2009 excessively and losing the connection to the computer. Make sure the adapter plate is oriented as shown in Figure 23 below with the sensor names on the adapter plate matching up with the sensor names on the instrument.
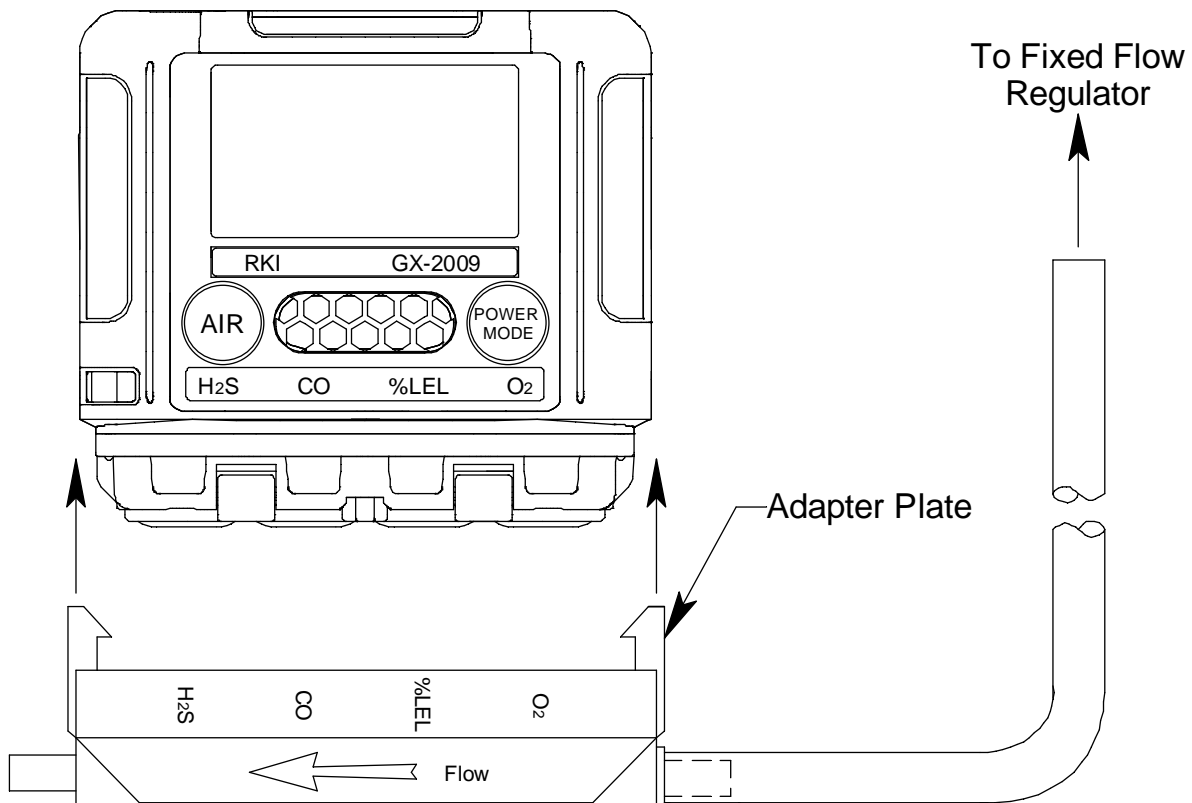
Figure 23: Installing the Adapter Plate, Auto Cal

10. Turn the regulator on/off knob counterclockwise to open it. Calibration gas will begin to flow.

11. Allow the gas to flow for two minutes.

12. Click **Span**. The program will take a few seconds to adjust the instrument's span settings. The Adjusting Span Window will appear during this period.
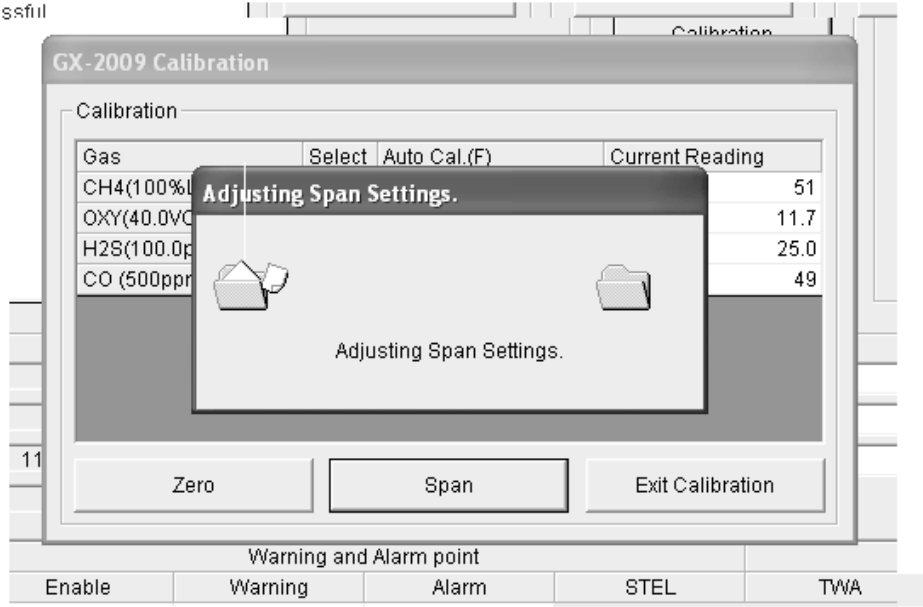
Figure 24: Adjusting Span Window

13. When the span adjustment is complete, the Adjustment Complete Window will indicate that the adjustment was completed for each channel if it was successful. Click **OK** to return to the Calibration Window.
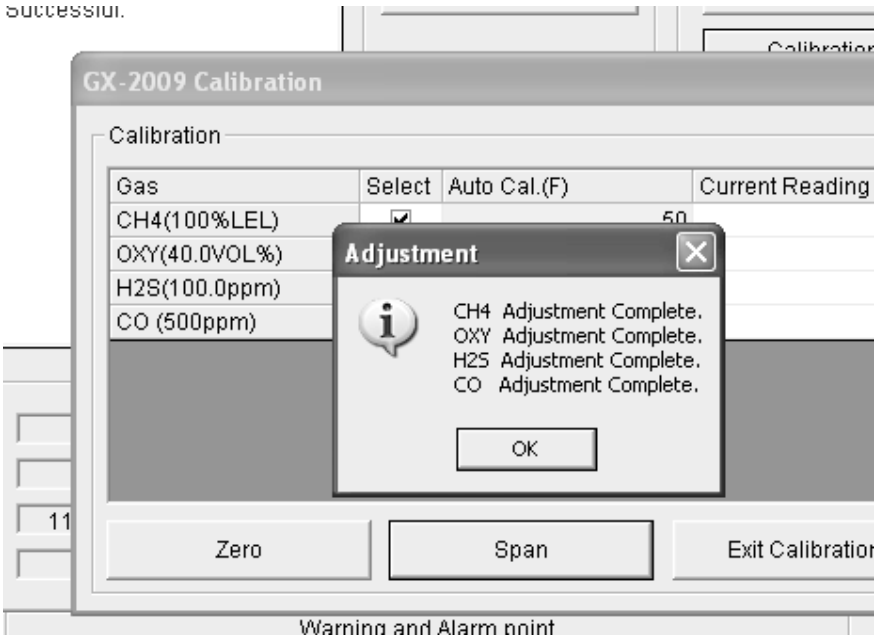

Figure 25: Adjustment Complete Window, Span

If any of the channels failed the span adjustment, the

message in the Adjustment Window for that channel will indicate that the span adjustment failed. Click **OK** to return to the Calibration Window. See the GX-2009 Operator's Manual for trouble shooting suggestions.

14. Turn the regulator on/off knob clockwise to close it.

15. Hold the GX-2009 in place with one hand while removing the adapter plate from the GX-2009's sensor face with the other to avoid moving the GX-2009 excessively and losing the connection to the computer

16. Remove the regulator from the calibration gas cylinder.

17. Leave the regulator connected to the calibration adapter plate for convenience.

18. Store the components of the calibration kit in a safe and convenient place.

19. Click **Exit Calibration**. The program will return to the Main Window.

Setting Commands

Use the Setting Commands to turn off an instrument, load a selected parameter configuration file to an instrument, save a parameter configuration file based on an instrument's settings, change various instrument parameter settings that can be uploaded to an instrument, or exit the program. The five Setting Commands are **Power Off**, **Load local file**, **Store local file**, **Detail Settings**, and **Exit**.
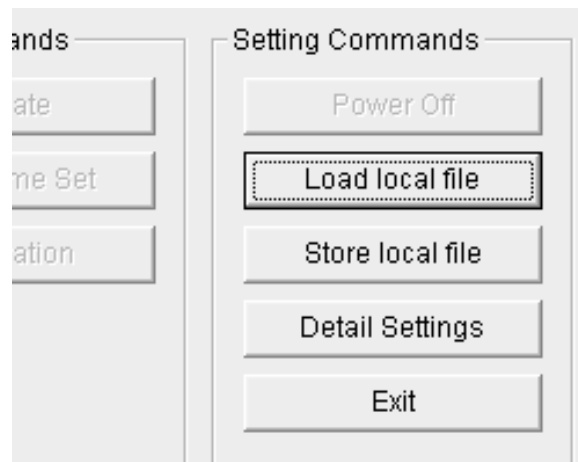

Figure 26: Setting Commands

Power Off

Use **Power Off** to turn off an instrument that is connected to the program. The **Power Off** button is blanked out if no instrument is connected to the program. If an instrument is connected, **Power Off** becomes active. Follow these steps to turn off a connected instrument:

1. With an instrument connected to the program, click **Power Off**.

2. The following window will appear prompting you to confirm
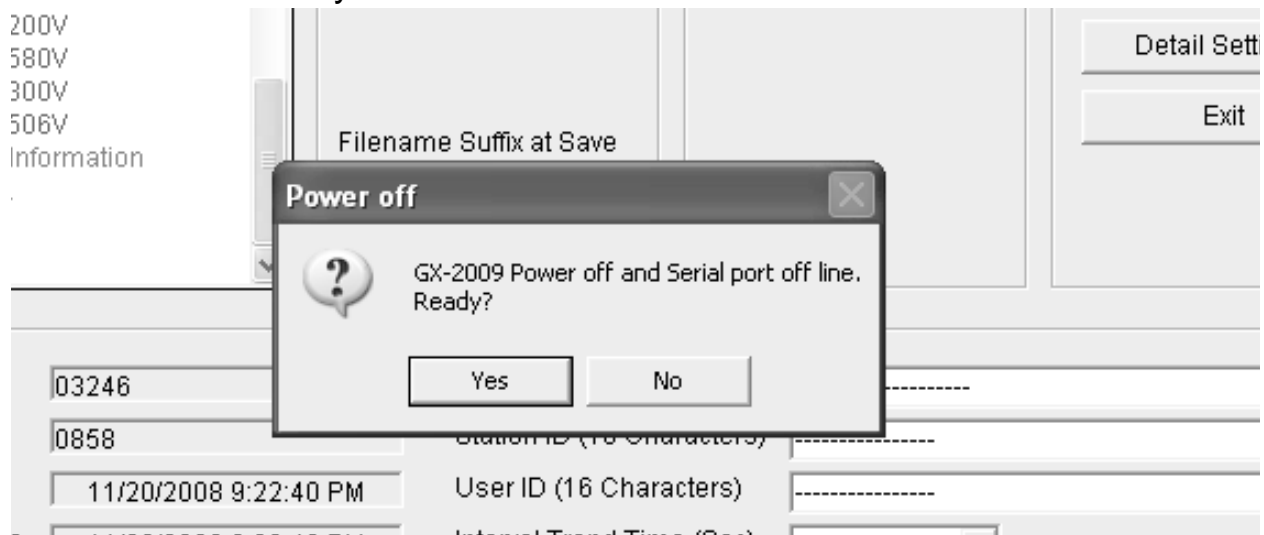
that you want to turn off the instrument.

Figure 27: Setting Commands

3. Click **Yes**. The program will take several seconds to turn off the instrument. The Connect Light in the Status area will turn gray indicating no connection to an instrument and the parameter fields in the GX-2009 Status area will become empty except for the PC Date/Time and the Interval Trend Time fields.

Load Local File

Use **Load Local File** to load a parameter configuration file to the program so that you can upload it to an instrument. The parameter configuration files have a **.seq** extension and are only readable by the GX-2009 User Setup Program. The parameter configuration files are user created by using the **Store Local File** button to save a file based on a connected instrument's parameter settings. See "Store Local File" on page 35 for a description of how to create and save a parameter configuration file.

When you upload a parameter configuration file to an instrument, you are uploading instrument parameters such as alarm points, alarm pattern, calibration frequency, etc. Uploading a parameter configuration file to an instrument will *not* change the instrument identification parameters, serial number, user ID, and station ID, if the file was created from a different instrument.

Follow these steps to load a parameter configuration file to the program and upload it to an instrument:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

NOTE: It is not necessary to use **Instrument Information** or **Instrument Get & Save** in order to load a parameter configuration file and upload it to an instrument. Although it is not necessary to use I**nstrument Information** or **Instrument Get & Save** before loading a file and uploading it to an instrument, you can do so after using either of these functions if desired.

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3. Click **Load local file**. The Open Window will appear allowing you to navigate to a file location and select a file to load.
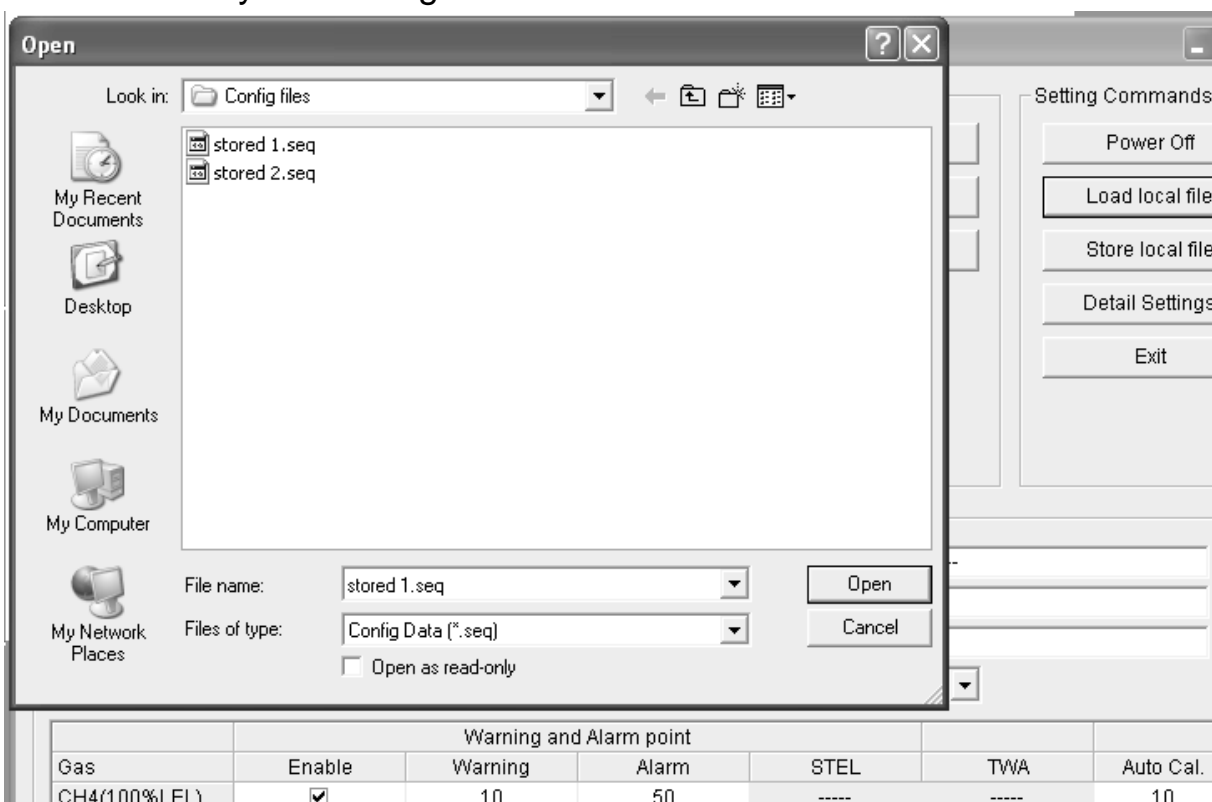

Figure 28: Open Window

4. Use the Open Window to navigate to the location of the file you wish to load.

5. Select the file you wish to load and click **Open**. The program will load the parameter configuration file and all of the parameter fields that can be uploaded from a parameter configuration file will be populated by the file's settings.

6. Click **Update** in the Write Commands. The Update Window will appear prompting you to confirm that you want to update the instrument.
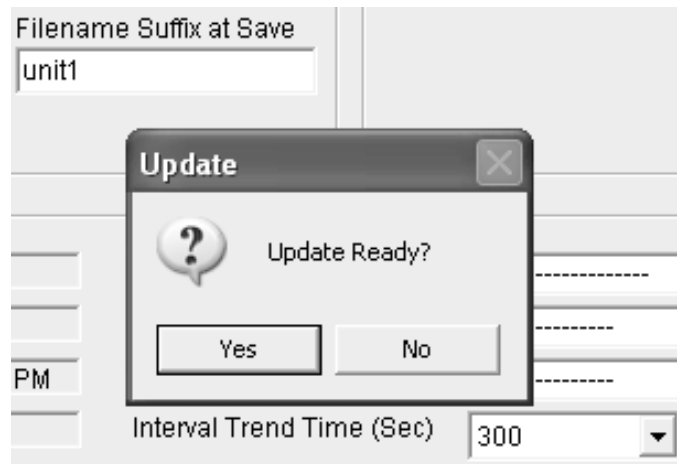

Figure 29: Update Window

7. Click Yes. The program will indicate that uploading is taking place with the Upload Window.
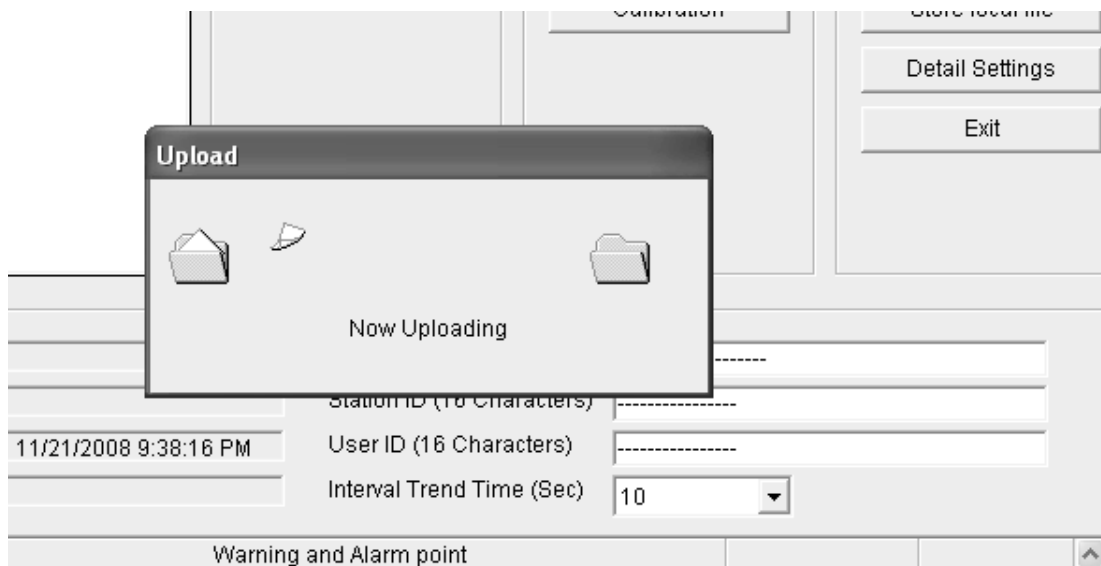

Figure 30: Upload Window

8. When the uploading is complete, the program will indicate that it is done.
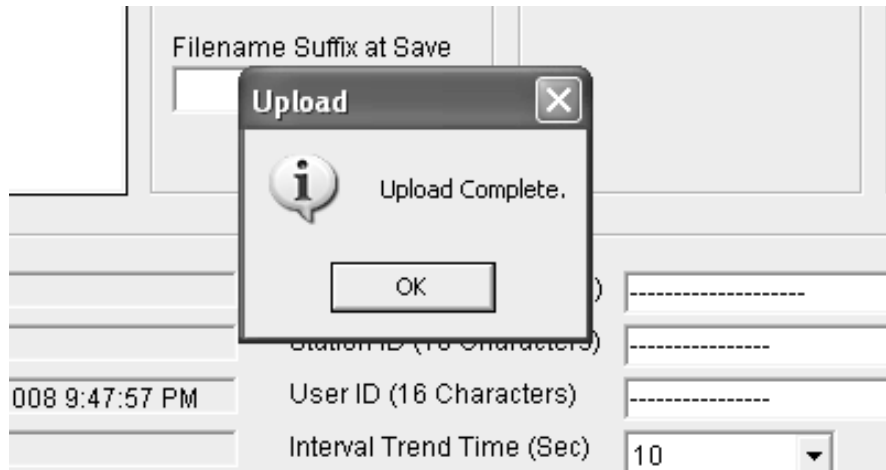

Figure 31: Upload Complete Window

9. Click **OK**. The program will return to the Main Window. The instrument's parameters have now been updated based on the loaded parameter configuration file.

Store Local File

Use Store Local File to save a parameter configuration file based on an instrument's parameter settings. The file can then be uploaded at a later time to another instrument to make its parameter settings match the original instrument's parameter settings or to restore the parameter settings of the original instrument if they have been changed. The instrument identification parameters, serial number, user ID, and station ID, are not saved in the parameter configuration files and they will not be changed when a file is uploaded to an instrument.

The parameter configuration files that are created have a **.seq** file extension. These files can only be used by the User Setup Program. When you use **Store Local File**, you can save the created files to any accessible location on your hard drive. Make sure to define a convenient location on your hard drive for these files if you use this feature so that you can conveniently find them when you want to upload a file to an instrument. When you select names for these files, you may want to structure the file names so you can identify from which instrument the file was saved or so that you can identify a particular parameter

configuration. Structure the file names so that you can easily identify the files as containing the information that is important to you.

Follow these steps to create a parameter configuration file based on a connected instrument:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

3. With the Read Command Buttons now active, click **Instrument Information** to retrieve the instrument's parameter configuration. The program indicates that it is downloading information from the instrument.
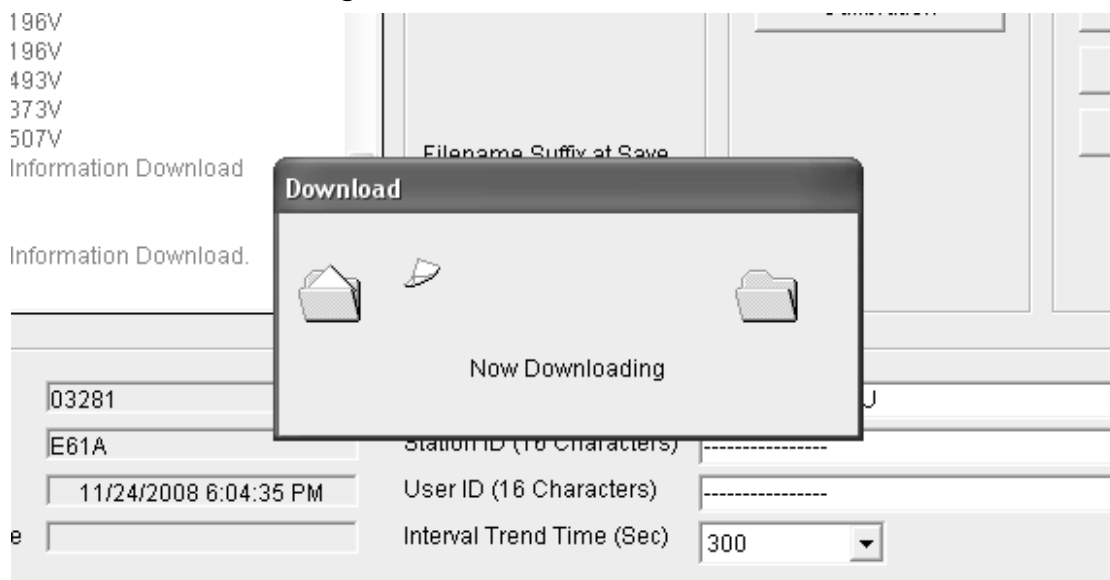

Figure 32: Instrument Information Downloading

4. The instrument's parameter configuration is now loaded in the User Setup Program.

5. Click **Store local file**. The Save As Window will appear allowing you to navigate to a file location and save a file to the selected location.
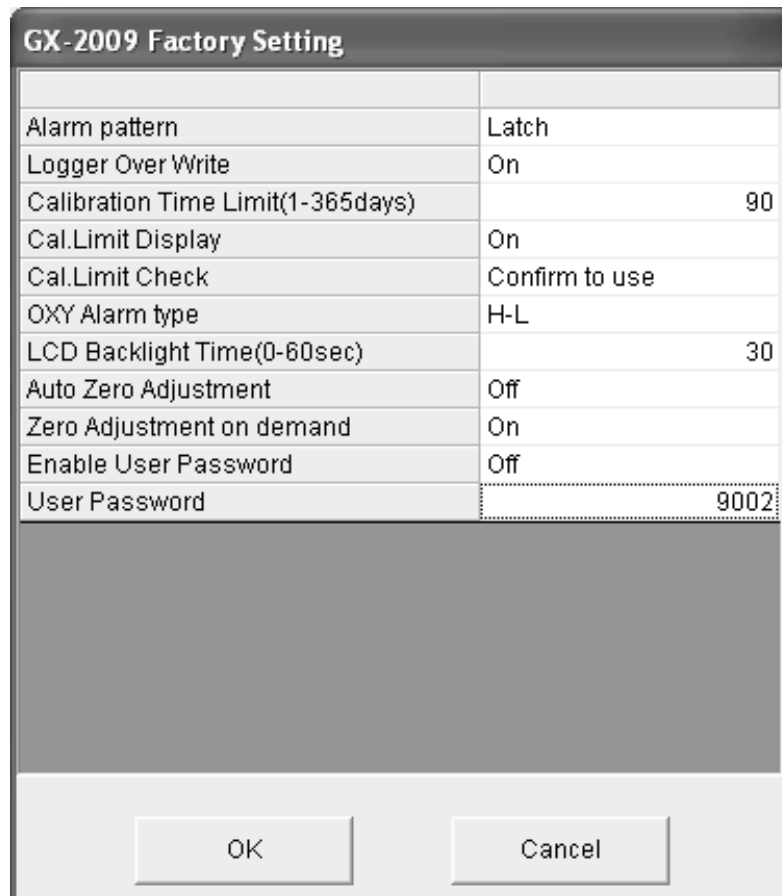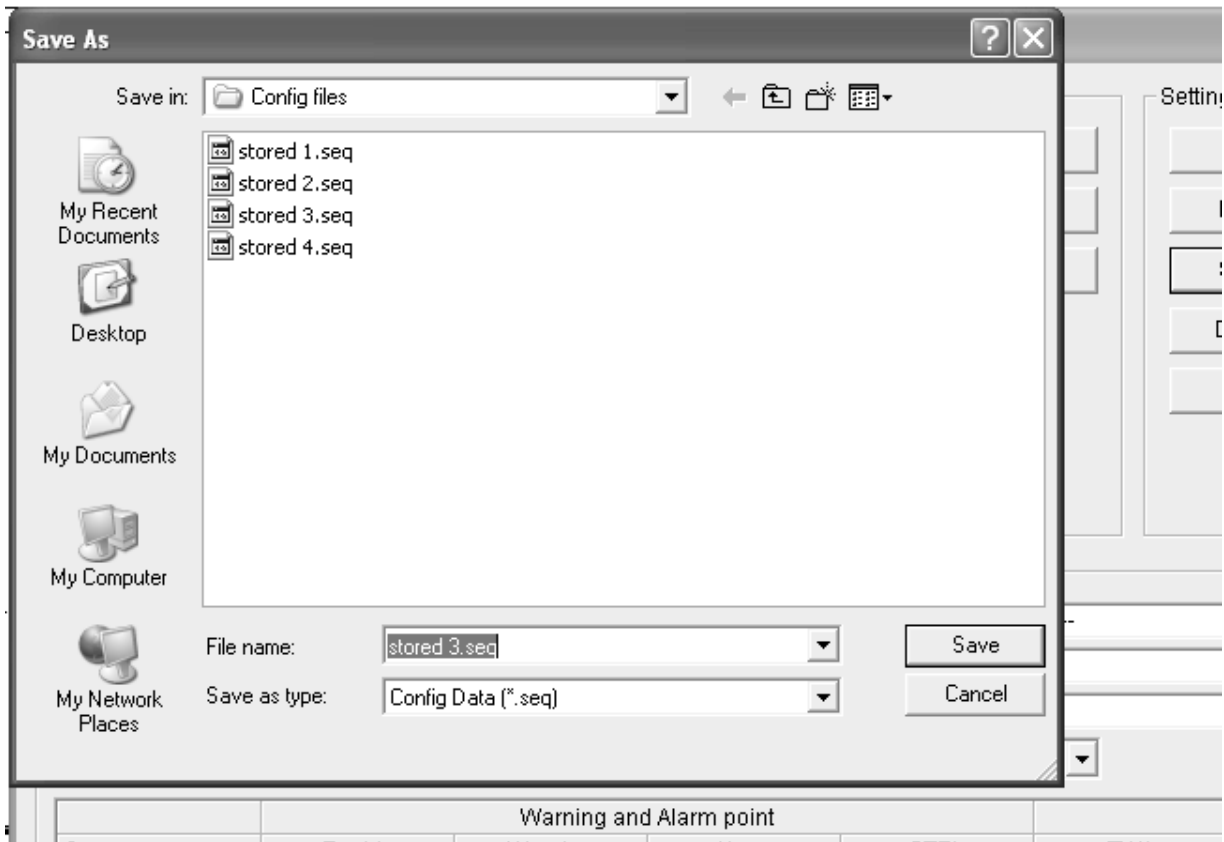
Figure 33: Save As Window

6. Use the Save As Window to navigate to the location where you want to save the file.

7. Type in a file name in the file name field. If you forget to include the **.seq** file extension, the program will automatically include it when it saves the file.

8. Click **Save**. The program will save the file and return to the Main Window.

Detail Settings

Use **Detail Settings** to set a variety of instrument parameters so that you can upload them to an instrument. The parameters accessible through **Detail Settings** are parameters that are factory set and not accessible through the GX-2009's operation modes. The factory settings for these parameters may not be how you want them set for your instrument(s). These parameters would typically only be changed when an instrument

is received as new if the factory settings for them are not how you want them.

The Factory Settings Window that is accessible with the **Detail Settings** button is shown below with the factory settings for each of these instrument parameters. If any of these settings is not set as you want, see the instructions in "Updating an Instrument's Detail Settings" on page 41 to change them. The Detail Settings are described below.

GX-2009 Factory Setting	
Alarm pattern	Latch
Logger Over Write	On
Calibration Time Limit(1-365days)	90
Cal.Limit Display	On
Cal.Limit Check	Confirm to use
OXY Alarm type	H-L
LCD Backlight Time(0-60sec)	30
Auto Zero Adjustment	Off
Zero Adjustment on demand	On
Enable User Password	Off
User Password	9002

OK   Cancel

Figure 34: GX-2009 Factory Settings Window

Alarm Pattern

With **Alarm pattern** set to *Latch* (factory setting), the GX-2009 remains in alarm condition until the alarm condition passes *and* the POWER MODE button is pressed and released.

With **Alarm pattern** set to *Reset*, the GX-2009 automatically resets an alarm when the alarm condition passes.

Logger Overwrite

With **Logger Over Write** set to *On* (factory setting), the GX-2009 writes over the oldest data with new data when the data logger memory is full.

With **Logger Over Write** set to *Off*, the GX-2009 stops saving data to the data logger when the data logger memory is full to avoid overwriting old data.

Calibration Time Limit

This setting defines the amount of time between calibrations. The minimum setting is 1 day and the maximum setting is 365 days. The factory setting is 90 days.

Cal. Limit Display

With **Cal. Limit Display** set to *On* (factory setting), the GX-2009 will give an indication at start up if it is due for calibration. The type of indication will depend on the **Cal. Limit Check** setting (see next item below).

With **Cal. Limit Display** set to *OFF*, if an instrument is due for calibration, it will give no indication at startup that it is due for calibration.

Cal. Limit Check

This item defines what indication is given during start up when calibration is due and **Cal. Limit Display** is set to *On*.

With **Cal. Limit Check** set to *Confirm to use* (factory setting), the GX-2009 will give an indication at start up if calibration is due and require the user to press and release the POWER MODE button to continue.

With **Cal. Limit Check** set to *Can't use*, if the unit is due for calibration the GX-2009 will give an indication at start up that calibration is due and the unit cannot be used until it is calibrated. With this setting, it is necessary to calibrate the instrument before it can be used. You may calibrate the instrument using the User Setup Program or the GX-2009's Calibration Mode or User Setup Mode. See "Calibration" on page 23 for instructions to calibrate an instrument using the User Setup Program. See the GX-2009 Operator's Manual for

instructions to calibrate an instrument using Calibration Mode or User Setup Mode.

With **Cal. Limit Check** set to *None,* no confirmation during startup or calibration is required to use the GX-2009 if it is past due for calibration.

LCD Backlight Time

This setting indicates the length of time the LCD backlight is on after when you press any button. The minimum setting is 0 seconds. The maximum setting is 60 seconds. The factory setting is 30 seconds.

Auto Zero Adjustment

With **Auto Zero Adjustment** set to *Off* (factory setting), no automatic fresh air adjustment will take place during a GX-2009's startup sequence when it is turned on.

With **Auto Zero Adjustment** set to *On,* the GX-2009 will perform an automatic fresh air adjustment during the startup sequence when it is turned on.

Zero Adjustment On Demand

With **Zero Adjustment on demand** set to *On* (factory setting), you can perform a fresh air adjustment in Measuring Mode by using the GX-2009's AIR button.

With **Zero Adjustment on demand** set to *Off,* the GX-2009's AIR button is not operational in Measuring Mode, so it is not possible to perform a fresh air adjustment in Measuring Mode. You can still perform a fresh air adjustment in Calibration Mode and User Setup Mode.

Enable User Password

With **Enable User Password** set to *On,* the GX-2009 prompts you for a password when you enter Calibration Mode or User Setup Mode.

With **Enable User Password** set to *Off* (factory setting), no password is required to enter Calibration Mode or User Setup Mode.

User Password

User Password allows you to define the password that allows you to enter Calibration Mode or User Setup Mode if **Enable User Password** is set to *On*.

Updating an Instrument's Detail Settings

Follow these steps to update an instrument's detail settings:

1. Launch the GX-2009 User Setup Program as described in "Launching the Program" on page 10.

2. Connect the GX-2009 to the User Setup Program as described in "Connecting a GX-2009 to the User Setup Program" on page 11.

3. With the Read Command Buttons now active, click **Instrument Information** to retrieve the instrument's parameter configuration. The program indicates that it is downloading information from the instrument.
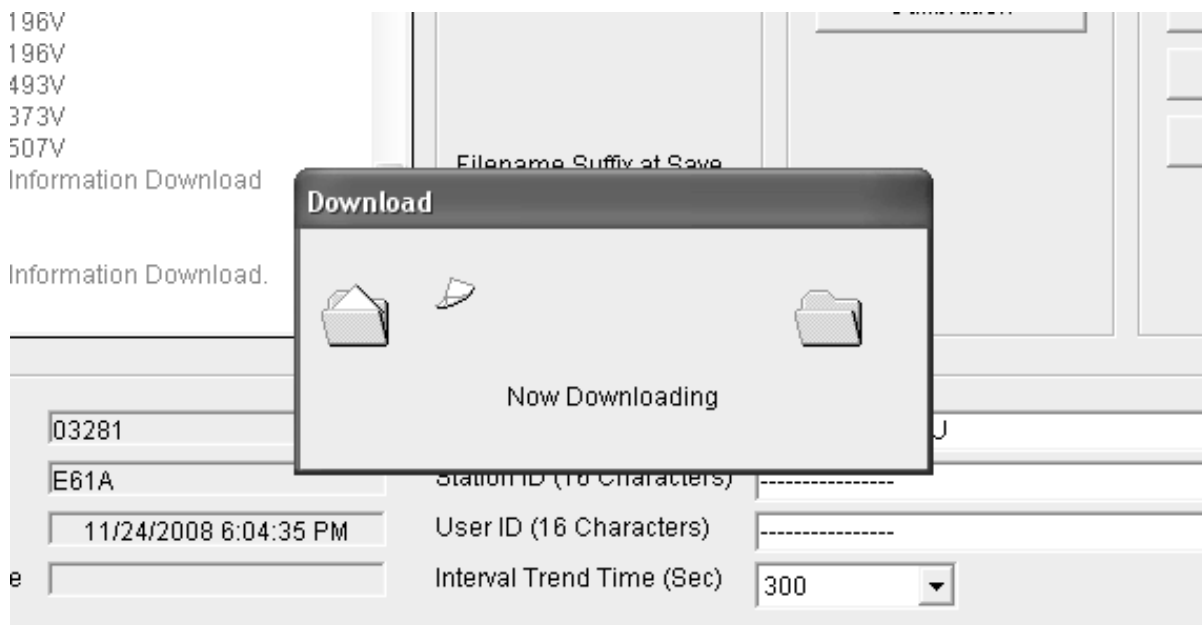

Figure 35: Instrument Information Downloading

4. The instrument's parameter configuration are now loaded in the User Setup Program.

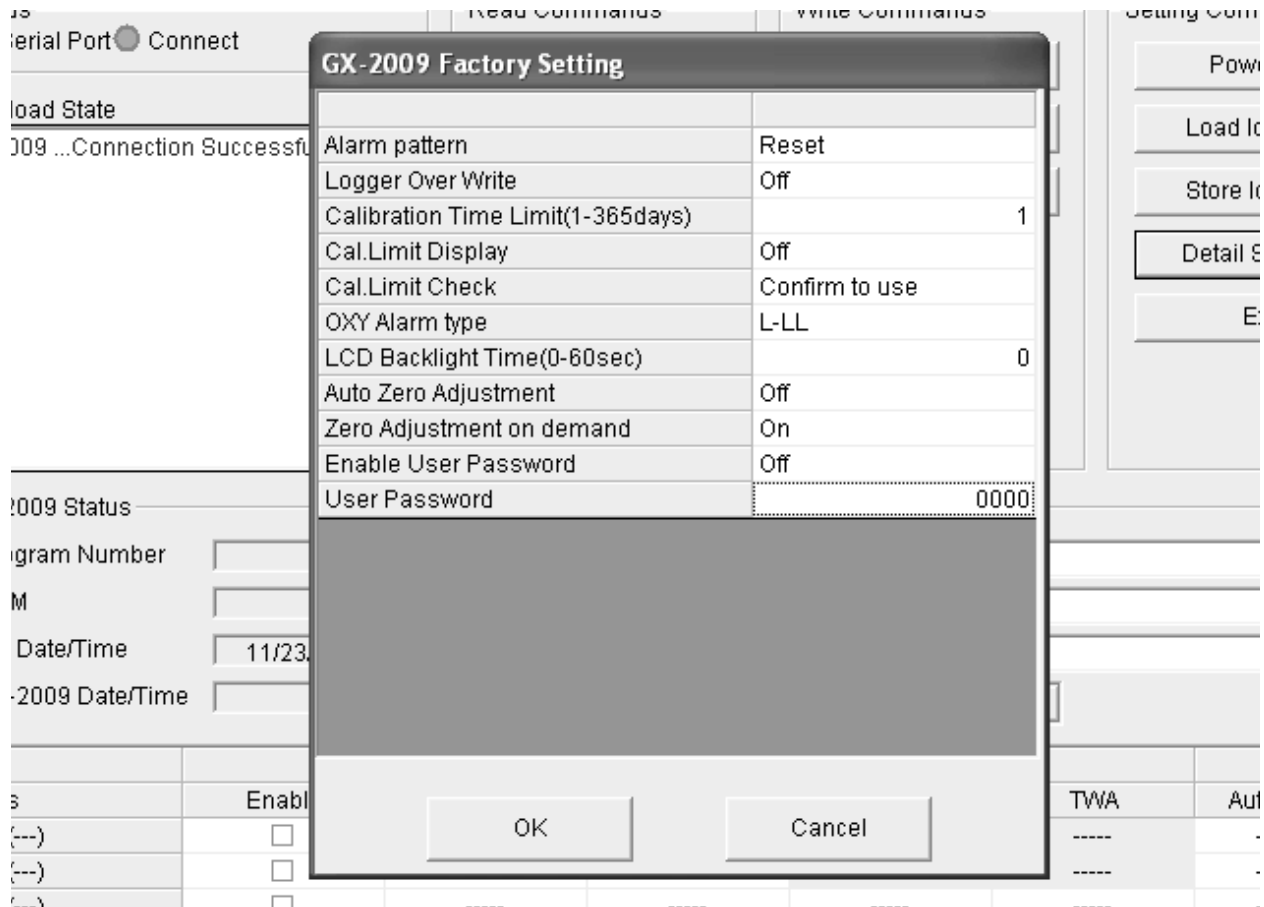5. Click **Detail Settings**. The GX-2009 Factory Setting Window will appear.

Figure 36: GX-2009 Factory Settings Window

6. Select the parameter or parameters that you want to change and update them. If you click a parameter setting field and there are multiple choices for that parameter setting, a drop down menu will appear so that you can choose the setting you want. If a parameter setting is a numerical value, you can click in the field for that parameter setting and enter the desired value.

7. Once you have made the desired changes, click **OK** to return to the Main Window.

8. Click **Update** in the Write Commands.The following window appears prompting you to confirm that you want to make the
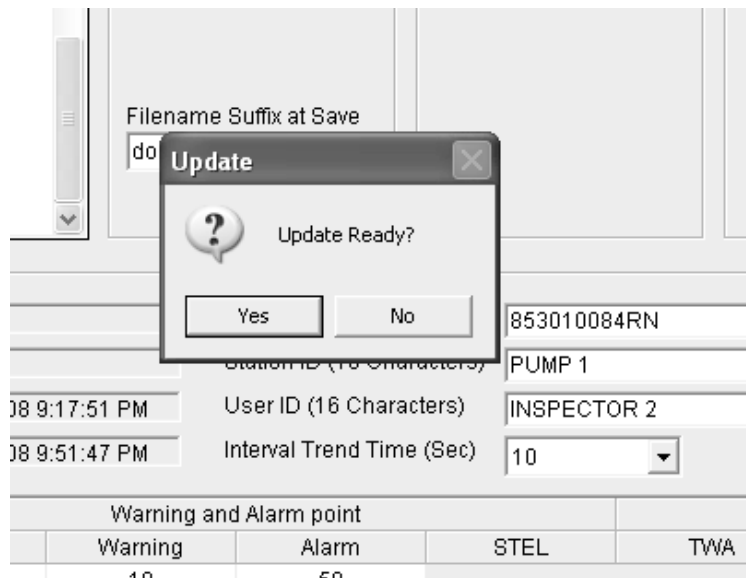
update.

Figure 37: Update Window

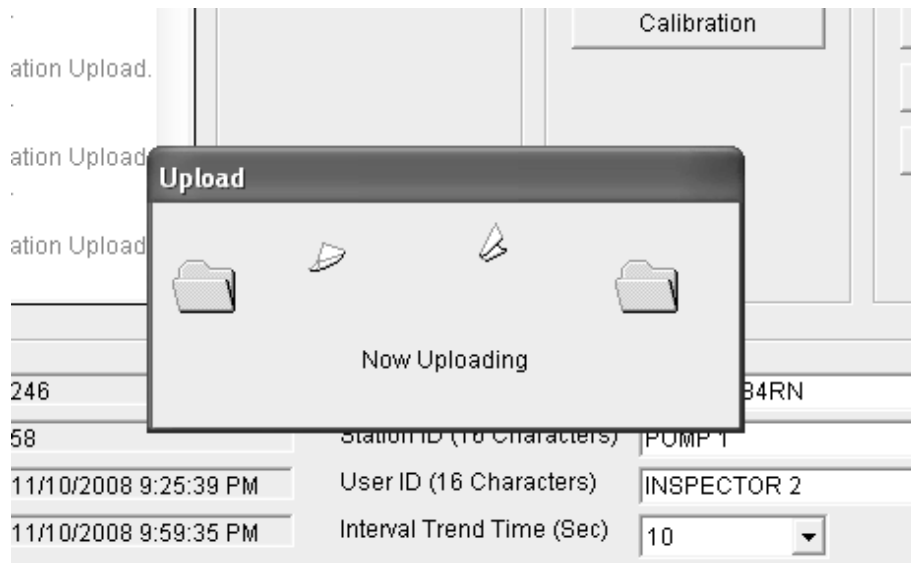9. Click **Yes** to proceed. The program will indicate that it is uploading information to the GX-2009.

Figure 38: Upload Window

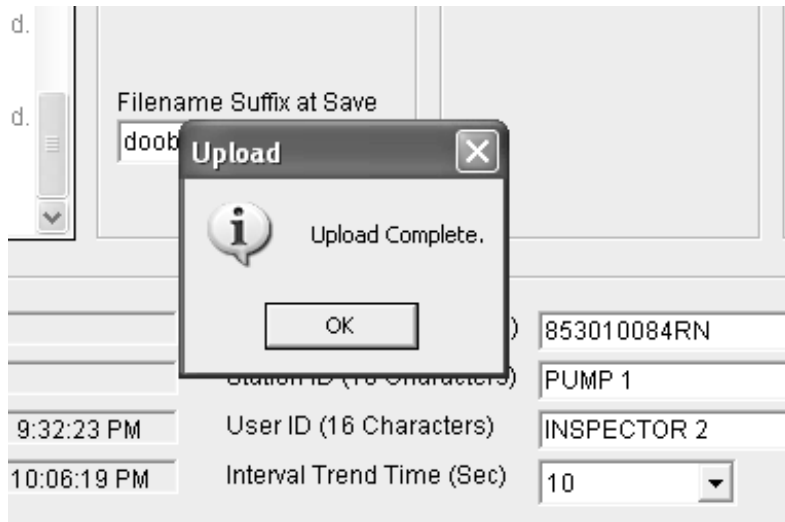10.When the uploading is complete, the program will indicate

that it is done.

Figure 39: Upload Complete Window

11. Click **OK**. The program will return to the Main Window.

Exit

Click **Exit** to shut down the User Setup Program. If an instrument is connected to the program, make sure to turn off the instrument before shutting down the program to avoid leaving the instrument on in PC Mode and draining the battery.

Spare Parts List

Table 1: Spare Parts List

Part Number	Description
06-1248RK-03	Calibration kit tubing, 3 foot length
49-5027RK	Cable, USB/IrDA adapter
71-0158RK	GX-2009 Operator's Manual
71-0162RK	GX-2009 User Setup Program Operator's Manual (this document)
81-GX01HSCO	One 58 ltr. aluminum cylinder, regulator, calibration plate, case & tubing

Table 1: Spare Parts List

Part Number	Description
81-GX01HSCO-LV	One 34 ltr. aluminum cylinder, regulator, calibration plate, case & tubing
81-GX01CO	One 103 ltr. cylinder, regulator, calibration plate, case & tubing
81-GX01CO-LV	One 34 ltr. steel cylinder, regulator, calibration plate, case & tubing
81-0090RK-01	Three-gas calibration cylinder, 50% LEL CH_4/12% O_2/ 50 ppm CO, 34 liter steel
81-0090RK-03	Three-gas calibration cylinder, 50% LEL CH_4/12% O_2/ 50 ppm CO, 103 liter steel
81-0154RK-02	Four-gas calibration cylinder, 50% LEL CH_4/12% O_2/50 ppm CO/25 ppm H_2S, 58 liter aluminum
81-0154RK-04	Four-gas calibration cylinder, 50% LEL CH_4/12% O_2/50 ppm CO/25 ppm H_2S, 34 liter aluminum
81-1003RK	Regulator, fixed flow, 0.5 LPM, 17/34 liter steel
81-1004RK	Regulator, fixed flow, 0.5 LPM, 58/34 liter aluminum, 103 liter steel
81-1107RK	Calibration/sample cap, rubber
82-5016RK	GX-2009 User Setup Program Package, includes installation CD and USB/IrDA adapter cable
83-0014RK	GX-2009 User Setup Program Installation CD