RKI
INSTRUMENTS

04 Series Setup Program
Operator's Manual

Part Number: 71-0526

Revision: P1

Released: 3/5/21

Table of Contents

CAUTION: *Read and understand this manual before using the 04 Series Setup Program.*
                     Also read and understand the 04 Series Operator's Manual included with the
                     04 Series portable gas detection unit.

Chapter 1: Introduction

Overview

The 04 Series Setup Program allows you to change instrument parameters. It also allows you to save parameter configuration files that can be viewed or used to update another instrument's parameter settings.

This manual will teach you how to:

- install and launch the software
- install the downloading cable (if needed)
- change 04 Series parameters
- 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
- perform a calibration

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

CAUTION: *The 04 Series detects oxygen deficiency and elevated levels of oxygen, carbon monoxide, hydrogen sulfide, or other toxic gases, all of which can be dangerous or life threatening. When using the 04 Series, you must follow the instructions and warnings in the 04 Series 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 04 Series Setup Program, your personal computer must meet the following requirements:

- **Operating Systems:** Windows® 7, Windows® 8, or Windows® 10

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

- **Memory:** 32 MB RAM minimum

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

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

Chapter 2: Setup

Installing the 04 Series Setup Program

1. Launch Windows$^{®}$.

2. Exit from all applications and open windows.

3. Go to www.rkiinstruments.com/04series.

4. Click on the **Download** tab.

5. Click the **04 Series Setup Program** link.

6. A .zip file will begin to download. Select whether you want to open or save the .zip file.

7. Extract the contents of the .zip file.

8. Double click the **setup.exe** file.

9. Follow the on-screen instructions in the InstallShield Wizard Window to install the program.

10. If the InstallShield Wizard finds versions of Windows$^{®}$ files on your computer newer than those in the downloaded .zip file, it will ask you if you want to keep these newer files. Click **Yes**.

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

IrDA Downloading Cable

The instrument uses an on-board infrared port to communicate with a computer. The port complies with IrDA 1.1 protocol standards.

NOTE:	If your computer has a built-in infrared port that complies with IrDA 1.1 protocol, 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 1.1 compliant IrDA/USB adapter cable on your computer. See pg. 41 for the RKI part number.

Installing an IrDA Adapter Cable

NOTE:	Do not plug the IrDA/USB adapter cable into your computer before installing the driver.

Follow the manufacturer's instructions for installing the cable on your computer. If you do not have installation instructions from the cable manufacturer, see your Windows documentation. In general, you must go to the Control Panel and use the Add Hardware Wizard to install the cable drivers. RKI makes no warranty for the operation or compatibility of the drivers with any particular device.

Windows® Infrared Operation Note

Before attempting to use the Setup Program with an IrDA adapter cable, you must confirm or change a setting in the Infrared Configuration window.

NOTE:	If you have a Windows 7 computer, the Infrared Configuration window may not appear. If the Infrared Configuration window does not appear, disregard the directions below.

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

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

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

3. If the Control Panel is viewed by category, open the **Hardware and Sound** folder then click "Send or Receive a File" under the **Infrared** section.

    If the Control Panel is viewed by icon, click the **Infrared** icon.

4. Click on the Image Transfer tab.

5. Deselect the selection box for "Allow digital cameras to use infrared to transfer images directly to my computer".
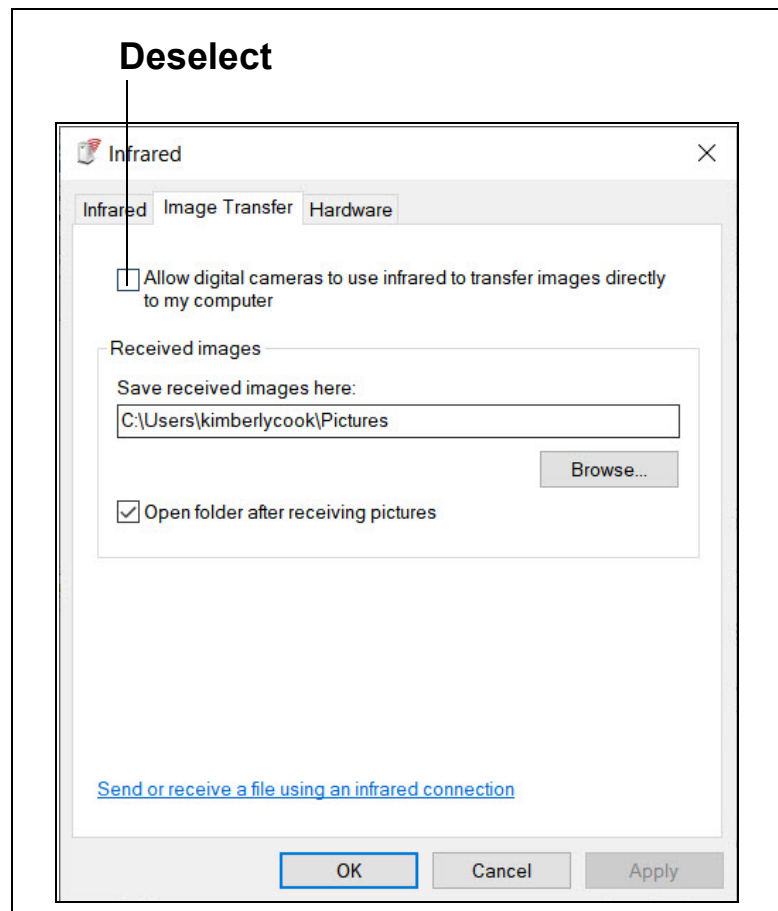
Figure 1: Image Transfer Tab

6. Click **OK**.

7. Close the Control Panel window.

Chapter 3: Connection and Downloading

Launching the Program

1. Double click the **04 Series Config** shortcut on the computer desktop or navigate to the **04 Series Config** program using the **Start** menu.

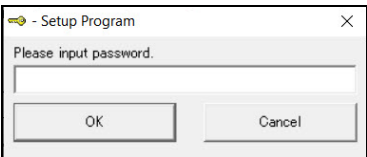2. The program prompts you to enter a password.

Figure 2: Password Window

3. The factory-set password is **1939**. See pg. 10 for instructions to change the password.

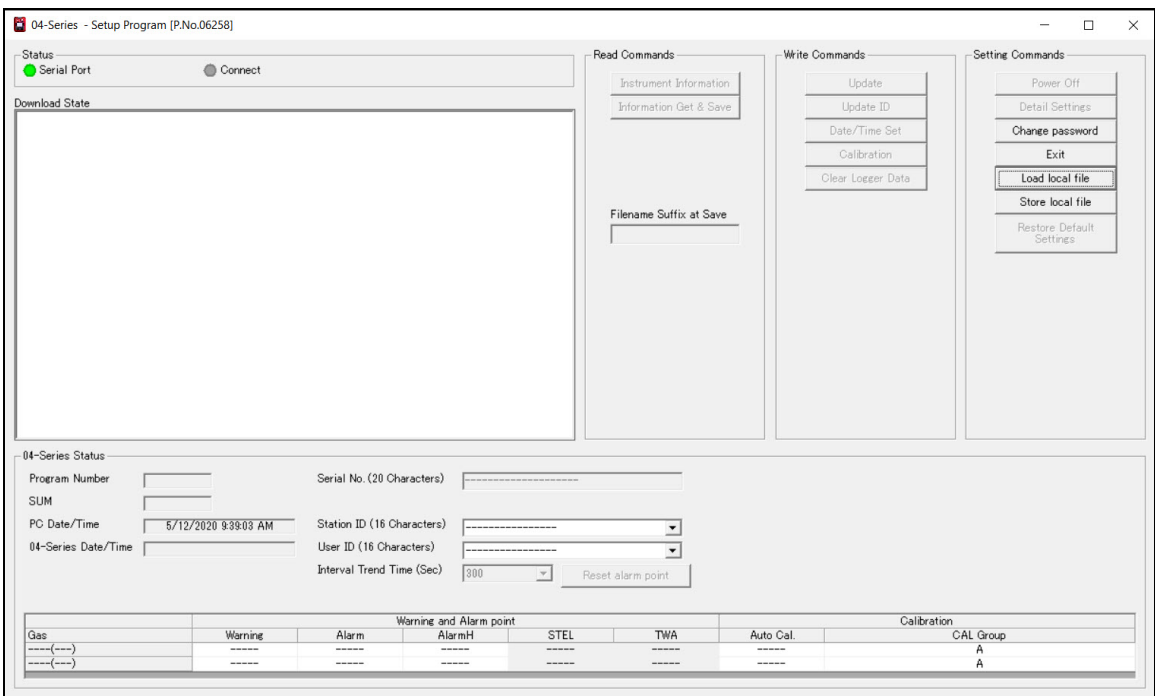4. The program launches and the Main Window appears.

Figure 3: Main Window

Changing the Password

Setup Program access is password-protected. The default password is **1939**. The password can be changed but it cannot be turned off.

1. Launch the 04 Series Setup Program as described above.

2. An instrument does <u>not</u> need to be connected to change the Setup Program password.

3. Click **Change password** on the right side of the Main Window.
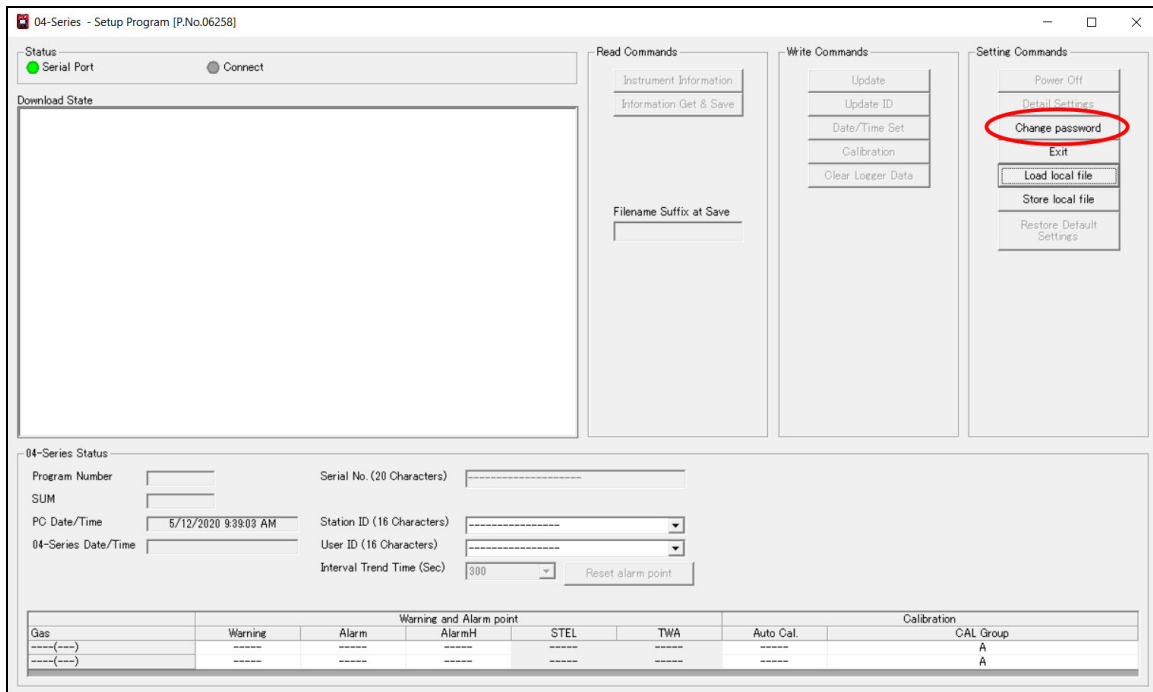
Figure 4: Change password Button

4. Type in the current password and click **Current password**.
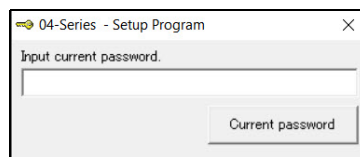
5. Enter the new password and click **New Password**.
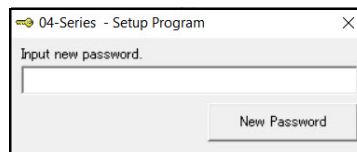
6. Reenter the new password and click **Confirm New Password**.
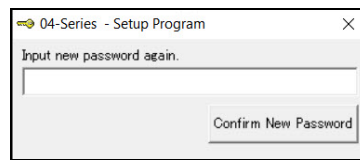
7. Click **OK** in the confirmation window.

Connecting an Instrument

1. Launch the 04 Series Setup Program as described on pg. 9.

2. If you are using an IrDA cable, plug the cable into your computer.

3. Place the instrument's infrared port 1-2 inches away from the computer or cable infrared port and align the two ports. The 04 Series' infrared port is at the top of the instrument.
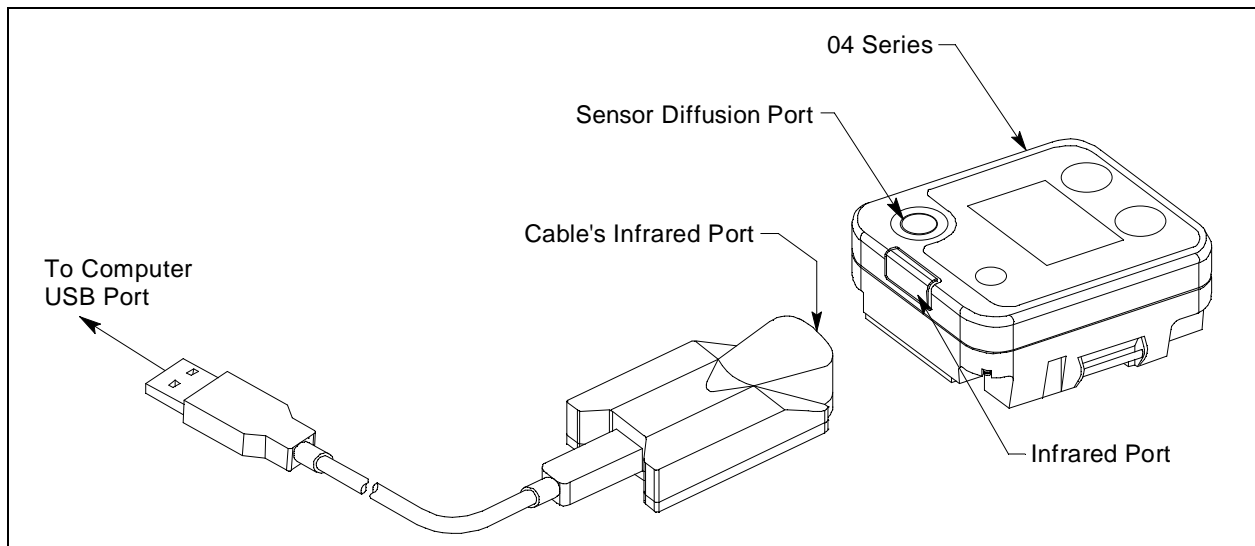
Figure 5: Aligning IrDA Ports

4. Press and hold the instrument's POWER/MODE button. Release it when you hear a beep.

5. When the program establishes a connection with the instrument, the Connect light turns green and "Connection Successful." displays.

Figure 6: Connection Message

Downloading Instrument Parameters

Instrument Information Button

Use **Instrument Information** to load a connected instrument's parameters into the Setup Program.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect a 04 Series as described above.

3. Click **Instrument Information**. The program indicates that it is downloading the instrument's parameters.

4. The instrument's parameter settings are now loaded in the Setup Program.
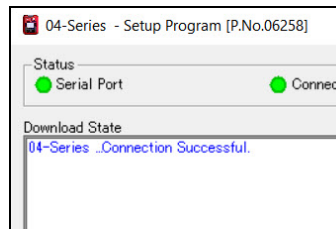
5. If desired, view or change the instrument parameters as described in "Chapter 4: Changing Instrument Parameters (Main Window)" on page 14 and "Chapter 5: Changing Instrument Parameters (Detail Settings Window)" on page 19.

information Get & Save Button

Information Get & Save does 2 things:

- Downloads instrument parameters to the Setup Program where they can be viewed and edited, just like **Instrument Information**.

- Saves instrument configuration and most recent calibration information to a .csv file. The default file name is "GP04_Setting.csv". The Setup Program's **Filename Suffix at Save** field lets you add a suffix to the file name ("GP04_Setting[suffix].csv"). All **Information Get & Save** operations save to the same .csv file until you change the suffix.

NOTE: If you perform an **Instrument Get & Save** operation on an SC-04, an SC04_Setting.csv file is also created. This file is for factory use and is not for customer use.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described above.

3. Type a suffix name into the **Filename Suffix at Save** field. The suffix can be used to differentiate files generated from different instruments or instrument types.

4. Click **Information Get & Save**. The program indicates that it is downloading the instrument's parameters.
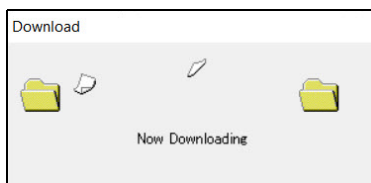
5. The file is saved in the following file path: C:\Users\[user name]\AppData\Roaming\ 04Series Config. Hidden folders need to be visible to access this location. Use a spreadsheet program such as Microsoft Excel to open and view the saved **.csv** file(s). Information changed in .csv files does not affect Setup Program or instrument operation.

6. The instrument's parameter settings are now loaded in the Setup Program.

7. If desired, use the Setup Program to view or change the instrument parameters as described in "Chapter 4: Changing Instrument Parameters (Main Window)" on page 14 and "Chapter 5: Changing Instrument Parameters (Detail Settings Window)" on page 19.

Turning Off an Instrument

1. With an instrument connected to the program, click **Power Off** and then **Yes** in the window that appears.

2. The instrument shuts off and the program's Connect light turns gray.

NOTE: If you shut down the Setup Program without turning off the instrument, the instrument goes into alarm after 3 minutes to indicate that it is not connected to a program. Reset the alarm by either a) starting up the Setup Program and establishing a connection or b) turning the instrument off using POWER/MODE.

Chapter 4: Changing Instrument Parameters (Main Window)
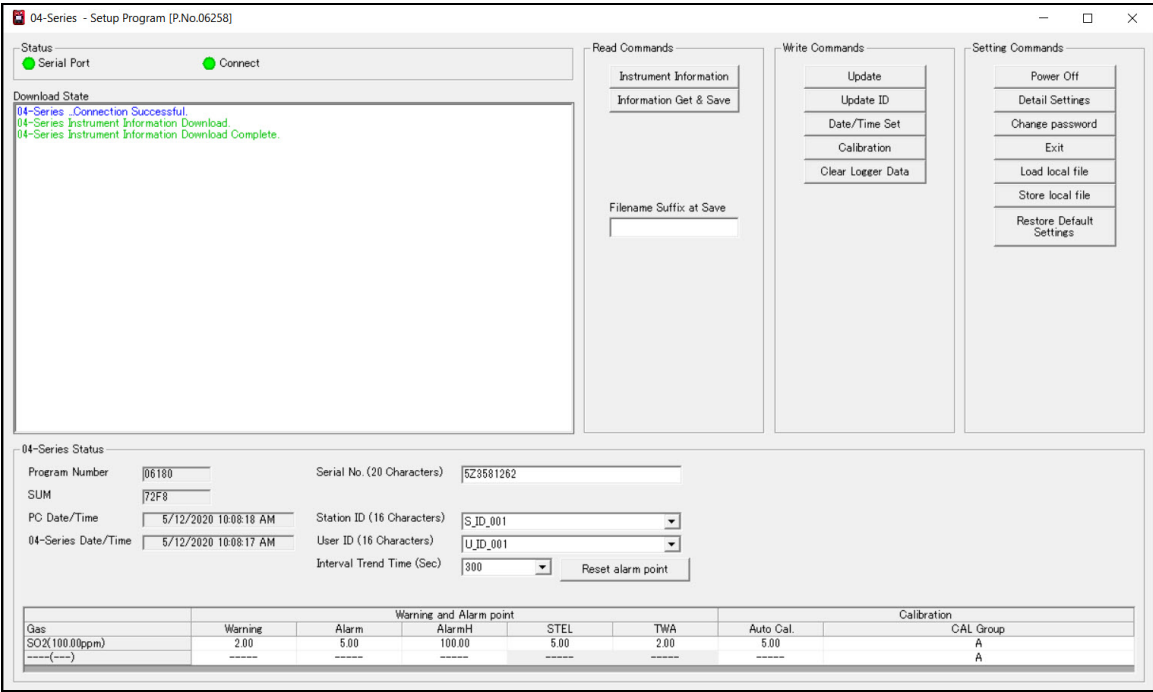
Figure 7: Main Window

IDs, Alarm Points, etc.

Table 1: Main Window Items

Parameter	Description
Serial Number	The serial number is 20 characters. Highlight the existing number, delete it, and type in a new number.
User ID/Station ID	Use the drop down menu to select a new ID. Custom user IDs and station IDs can be generated in the **Detail Settings\Station & User** tab (pg. 27).

Table 1: Main Window Items

Parameter	Description
Interval Trend Time	Use the drop down menu to select an interval trend time. Datalogging capacity based on interval trend time is shown in the table below. | Interval Time	Datalogging Capacity | |---|---| | 10 seconds | 10 hours | | 20 seconds | 20 hours | | 30 seconds | 30 hours | | 1 minute | 60 hours | | 3 minutes | 180 hours | | 5 minutes | 300 hours | | 10 minutes | 600 hours |
Alarm Points	Double click an alarm point and type in a new value. If you enter an unacceptable value for an alarm point, the cell's background turns red. You cannot upload instrument parameters until you change the alarm point to an acceptable value. Alarm setpoint limitations are shown below.
Reset alarm point button	The **Reset alarm point** button resets the alarm points to the RKI default settings <u>or</u> to the settings saved by a **SAVE AP** operation in the instrument's Gas Select Mode, if one was done.
Auto Cal Value	Double click an auto cal value and type in a new value. The auto cal value should match the concentration listed on your calibration gas cylinder.
Calibration Group	Double click a cylinder assignment to get the drop down menu to appear. Select a new cylinder. CO, H_2S, O_2, and super-toxic versions just have 1 cylinder. CO(-H2) and CO/O_2 versions have 2 cylinders. CO and H_2 should never be assigned to the same cylinder. CO and O_2 can be assigned to the same cylinder if you calibrate with CO in <u>nitrogen</u>. If you calibrate with CO in <u>air</u>, then CO and O_2 need to be assigned to different cylinders and you need to also get a cylinder of 100% nitrogen to zero the oxygen sensor.

Alarm setpoint limitations (for **Alarm Points** above):

Gas	Limitation
O_2	• $0.0\% \leq$ **ALARM** $\leq$ **WARNING** $\leq 21.8\%$ • $20.0\% \leq$ **ALARM H** $\leq 40.0\%$
H_2S	1.0 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 200.0 ppm
CO	15 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 2000 ppm
HCN	0.9 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 30.0 ppm
NO_2	0.50 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 20.00 ppm
PH_3	0.05 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 20.00 ppm
SO_2	0.50 ppm $\leq$ **WARNING** $\leq$ **ALARM** $\leq$ **ALARM H** ≤ 100.00 ppm

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Update the desired parameters.

5. If you updated the serial number, user ID, or station ID, click **Update ID** and **Yes** in the window that appears.

6. The ID information is uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

7. If you updated the interval trend time, alarm points, auto cal value, or calibration group, click **Update** and **Yes** in the window that appears.

8. New parameters are uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

Date/Time

Performing a **Date/Time Set** operation sets the 04 Series' date and time to the computer's date and time.
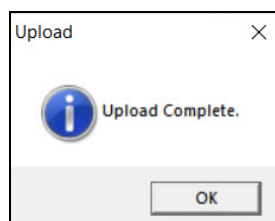
1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Date/Time Set**.

5. Click **Yes** in the window that appears.

6. Click **OK** when the upload is complete. The 04 Series' date and time now match the computer's date and time.

Clear Logger Data

Performing a **Clear Logger Data** operation clears all logged data from the instrument. Be sure to download data to the Datalogging Program before clearing the data.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Clear Logger Data**.

5. Click **Yes** in the window that appears.

6. The message window indicates **Start Data Removal** and the Setup Program communicates with the 04 Series.

7. After a few minutes, the message window indicates **Data Removal Complete**. All logged data has been cleared from the 04 Series.
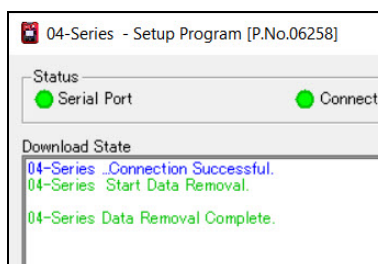
Restore Default Settings

Performing a **Restore Default Settings** operation restores all instrument settings to the RKI default.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Restore Default Settings**.

5. Click **Yes** in the window that appears.

6. The program begins uploading the default settings to the instrument.
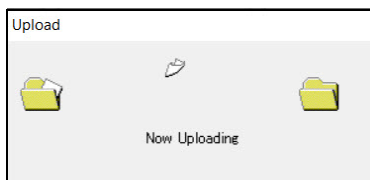
7. Click **OK** when the upload is complete. The RKI default settings are now loaded into the 04 Series.
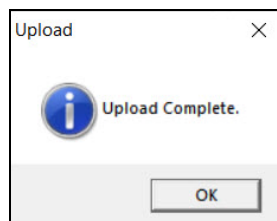
Chapter 5: Changing Instrument Parameters (Detail Settings Window)

This chapter shows you how to:

- Change instrument parameters in the Parameter tab of the Detail Settings Window. The Parameter tab has 3 sub-tabs of adjustable settings.

- Make custom User IDs and Station IDs in the Station&User tab of the Detail Settings Window.

Parameter Tab - Maintenance

04-Series Factory Setting			
Station & User		Parameter	
Maintenance	User	Disp	
Battery Change Date			190101
Alarm Pattern	Latch		
Zero Adjustment on Demand	On		
Auto Zero Adjustment	Off		
ID Display	Off		
Display CAL group settings	Off		
DISP Suppress	On		
DISP Zero Follower	Off		
Enable Maintenance Password	On		
Maintenance Password			0400
Password Protection	Off		

	Sensor Change Date	Suppress	Zero Follower
SO2(100.00ppm)	191102	On	On
----(----)	190101	On	On

(Left space 0)   OK   Cancel

Figure 8: Parameter\Maintenance Tab

Table 2: Parameter\Maintenance Tab Items

Parameter	Description
Battery Change Date	Keep track of what date the battery was replaced. Format is YYMMDD.
Alarm Pattern	**Reset**: Instrument automatically resets alarm condition once gas reading falls below (rises above for oxygen Warning and Alarm) the alarm setpoint. **Latch** (factory setting): User must press POWER/MODE or AIR to reset an alarm condition once gas reading falls below (rises above for oxygen Warning and Alarm) the alarm setpoint.
Zero Adjustment on Demand	**On** (factory setting): You can perform a fresh air adjustment by pressing and holding AIR in Measuring Mode. **Off**: You cannot perform a fresh air adjustment by pressing and holding AIR in Measuring Mode.
Auto Zero Adjustment	**On**: You are prompted to do an auto zero operation at the end of the warmup sequence. **Off** (factory setting): You are not prompted to do an auto zero operation at the end of the warmup sequence.
ID Display	**On**: User ID and Station ID screens appear in startup sequence. IDs can be changed in Display Mode if **DISP MODE SETTING** in the **Parameter\User** tab is also set to **On**. **Off** (factory setting): User ID and Station ID screens do not appear in startup sequence. IDs cannot be changed in Display Mode.
Display CAL Group Settings	**On** (factory setting for CO/O2 and hydrogen-compensated CO versions): CYL SEL item appears in User and Maintenance Modes' GAS CAL item. **Off** (factory setting for CO, H_2S, and all super toxic gases): CYL SEL item does not appear in User and Maintenance Modes' GAS CAL item. * This item does not generally need to be changed from its default.
DISP Suppress	**On**: Zero suppression menu item appears in User Mode. **Off** (factory setting): Zero suppression menu item does not appear in User Mode. Zero suppression menu item always appears in Maintenance Mode.
DISP Zero Follower	**On**: Zero follower menu item appears in User Mode. **Off** (factory setting): Zero follower menu item does not appear in User Mode. Zero follower menu item always appears in Maintenance Mode.
Enable Maintenance Password	**On** (factory setting): Maintenance Mode is password-protected. **Off**: Maintenance Mode is not password-protected.
Maintenance Password	Defines the 4-digit password needed to enter Maintenance Mode. Factory setting is **3000**.
Password Protection	**On**: A password (defined in **User Password** field of **Parameter\User** tab) is required to turn off the 04 Series, reset an alarm condition, clear the Peak reading, perform an auto zero, perform a demand zero, or enter User Mode from the warmup sequence to perform a bump test or calibration. **Off** (factory setting): A password is not required to turn off the 04 Series.
Sensor Change Date	Keep track of what date the sensor was replaced. Format is YYMMDD.

Table 2: Parameter\Maintenance Tab Items

Parameter	Description
Suppress	This item is not intended for field adjustment. The factory setting is **On**. Suppression values are: O_2: 0.5% volume H_2S: 0.3 ppm CO: 2 ppm HCN: 0.5 ppm NO_2: 0.30 ppm PH_3: 0.02 ppm SO_2: 0.20 ppm
Zero Follower	This item is not intended for field adjustment. Factory setting is **On**. The oxygen channel does not support zero follower functionality.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Detail Settings** and then click on the **Parameter\Maintenance** tab.

5. For parameters with defined options, click on the current parameter setting and use the drop down menu to choose a new setting.

6. For open-ended parameters like **Sensor Change Date**, double click the current setting, delete the current setting, and type in a new one.

7. Change other parameters in the **Parameter\User** (pg. 22), **Parameter\Disp** (pg. 26), or **Station & User** (pg. 27) tabs, if desired.

8. Click **OK**.

9. Change parameters in the Main Window (pg. 14), if desired.

10. Click **Update** and **Yes** in the window that appears.

11. New parameters are uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

12. If you changed the serial number, user ID, or station ID in the Main Window, click **Update ID** and **Yes** in the window that appears.

13. The ID information is uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

Parameter Tab - User

Figure 9: Parameter\User Tab

Table 3: Parameter Tab-User Items

Parameter	Description
Cal.Limit Display	**On** (factory setting): Instrument alerts you at startup if a calibration is due. Type of notification depends on **Cal.Limit Check** setting. **Off**: Instrument does <u>not</u> alert you at startup if a calibration is due.
Calibration Time Limit	How often the instrument should be calibrated. Choices are **1 - 365** days. Factory setting is **90** days.
Cal.Limit Check *Does not affect operation unless* ***Cal. Limit Display*** *is set to* ***On*** *(factory setting).*	**Confirm to Use** (factory setting): Press and release AIR to acknowledge calibration is due then continue into Measuring Mode. **Can't Use**: Cannot enter Measuring Mode until a successful calibration is performed. **None**: A screen indicates that a calibration is due but warmup continues.
Automatic start after successful calibration	**On** (factory setting): If only one calibration cylinder is assigned, the 04 Series automatically starts its warmup sequence after a <u>successful</u> calibration. If multiple calibration cylinders are assigned, this parameter has no effect on operation. **Off**: The 04 Series does <u>not</u> automatically start its warmup sequence after a successful calibration.

Table 3: Parameter Tab-User Items

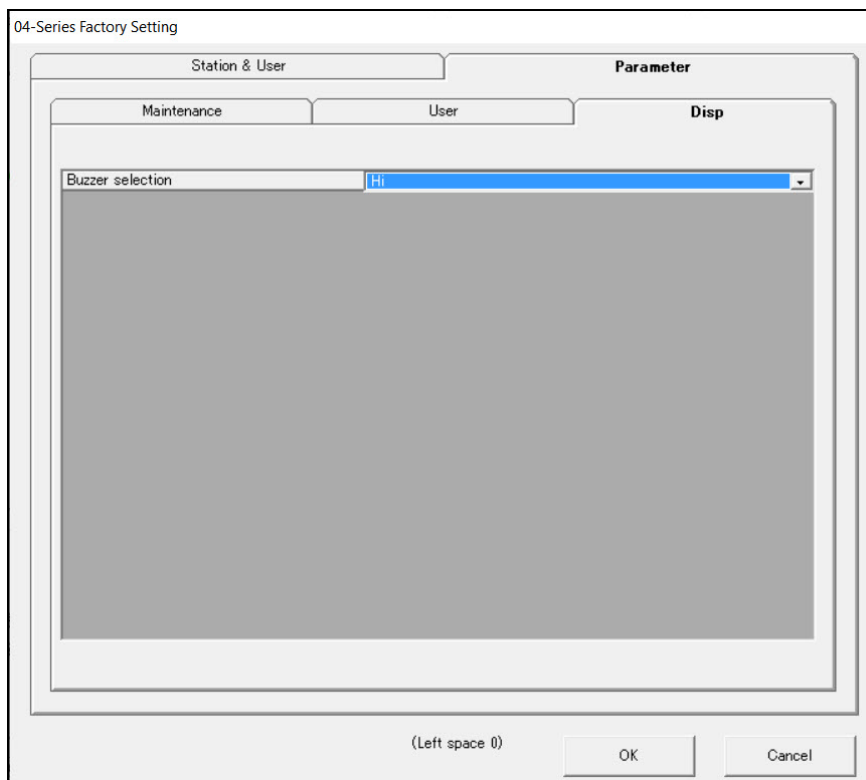| Parameter	Description
One Touch Cal. Time	**0 seconds** (factory setting): Auto Calibration (**A-CAL**) item appears in **GAS CAL** menu instead of Easy Calibration (**E-CAL**). **XX seconds**: Easy Calibration (**E-CAL)** item appears in **GAS CAL** menu instead of Auto Calibration (**A-CAL**). During a calibration, the instrument counts down from the number of seconds you select.
Bump Test Limit Display	**On**: Instrument alerts you at startup if a bump test is due. Type of notification depends on **Bump Test Limit Check** setting. **Off** (factory setting): Instrument does <u>not</u> alert you at startup if a bump test is due.
Bump Test Time Limit	How often the instrument should be bump tested. Choices are **0** to **30** days. Factory setting is **30** days.
Bump Test Limit Check *Does not affect operation unless* **Bump Test Limit Display** *is set to* **On** *(factory setting is* **Off**).	**Confirm to Use** (factory setting): Press and release AIR to acknowledge bump test is due then continue into Measuring Mode. **Can't Use**: Cannot enter Measuring Mode until a successful bump test is performed. **None**: A screen indicates that a bump test is due but warmup continues.
Automatic start after successful bump test	**On** (factory setting): If only one calibration cylinder is assigned, the 04 Series automatically starts its warmup sequence after a <u>successful</u> bump test. If multiple calibration cylinders are assigned, this parameter has no effect on operation. **Off**: The 04 Series does <u>not</u> automatically start its warmup sequence after a successful bump test.
Bump Test Time	How long gas is applied during a bump test. Options: **30** (factory setting), **45**, **60**, and **90** seconds.
Bump Test Threshold	Percentage of the calibration gas concentration that the response must be within in order to pass bump. Options: **10%**, **20%**, **30%**, **40%**, and **50%** (factory setting). *Example: A bump test done with 50 ppm and a 50% threshold setting must respond between 25 ppm and 75 ppm to pass.*
Calibration Time(sec) after Bump Test Failed	How long gas is applied during an automatic calibration after a failed bump test. Only applies if **Calibration After Bump Test Failed** is set to **On**. **Bump Test Time** is deducted from this time. Options: **60** (factory setting), **90**, and **120** seconds.
Calibration After Bump Test Failed	**On** (factory setting): If a bump test fails, a calibration automatically starts. **Off**: If a bump test fails, a calibration does <u>not</u> automatically start.
Lunch Break	**On**: Lunch break feature is on. The instrument asks if you want to resume peak and TWA readings at startup. **Off** (factory setting): Lunch break feature is off. The instrument resets peak and TWA readings every time it's turned on.

Table 3: Parameter Tab-User Items

Parameter	Description
Confirmation Beep	**OFF** (factory setting): The 04 Series does not provide a confirmation alert or non-compliance indicator. **LED**: The 04 Series' LEDs double flash as often as defined by the **Confirmation Beep Time** parameter to verify that the instrument is operating. **BUZZER**: The 04 Series' buzzer double beeps as often as defined by the **Confirmation Beep Time** parameter to verify that the instrument is operating. **LED+BUZZER**: The 04 Series' LEDs double flash and the buzzer double beeps as often as defined by the **Confirmation Beep Time** parameter to verify that the instrument is operating. **BUMP/CAL**: If a bump test or a calibration is due and if **Bump Test Limit Check** or **Cal.Limit Check** is set to **Confirm to Use** (factory setting) or **None**, the 04 Series' LEDs double flash as often as defined by the **Confirmation Beep Time** parameter to indicate a non-compliance. Once a bump test or calibration (depending on which is due) is done, the LEDs stop flashing.
Confirmation Beep Time(min)	Confirmation alert interval. Type of confirmation alert depends on **Confirmation Beep** setting. Options: **30 seconds**, **1 - 99 minutes** in 1 minute increments. Factory setting is **5 minutes**.
LCD Backlight Time	How long the backlight stays on after the last button press. Options: **0 - 255 seconds** in 1 second increments. Factory setting is **30 seconds**.
Key Tone	**On** (factory setting): Buzzer sounds when button is pressed. **Off**: Buzzer does not sound when button is pressed.
DISP MODE SETTING	**On**: **BUZZ.VOL** screen appears in Display Mode. **USER ID** and **STN ID** screens appear in Display Mode if **ID Display** in **Parameter\Maintenance** tab is also set to **On** (factory setting is **Off**). **Off** (factory setting): **USER ID**, **STN ID**, and **BUZZ.VOL** screens do not appear in Display Mode.
Enable User Password	**On**: User Mode is password protected. **Off** (factory setting): User Mode is not password-protected.
User Password	Defines the password needed to enter User Mode or to turn the instrument off (if **Password Protection** is set to **On** in the **Parameter\Maintenance** tab). Factory setting is **0000**.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Detail Settings** and then click on the **Parameter\User** tab.

5. For parameters with defined options, click on the current parameter setting and use the drop down menu to choose a new setting.

6. For open-ended parameters like **User Password**, double click the current setting, delete the current setting, and type in a new one.

7. Change other parameters in the **Parameter\Maintenance** (pg. 19), **Parameter\Disp** (pg. 26), or **Station & User** (pg. 27) tabs, if desired.

8. Click **OK**.

9. Change parameters in the Main Window (pg. 14), if desired.

10. Click **Update** and **Yes** in the window that appears.

11. New parameters are uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

12. If you changed the serial number, user ID, or station ID in the Main Window, click **Update ID** and **Yes** in the window that appears.

13. The ID information is uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

Parameter Tab - Display

Figure 10: Parameter\Display Tab

Table 4: Parameter Tab-Display Items

Parameter	Description
Buzzer selection	**Hi** (factory setting): Buzzer volume is high. **Low**: Buzzer volume is low.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Detail Settings** and then click on the **Parameter\Disp** tab.

5. Click on the current parameter setting and use the drop down menu to choose a new setting.

6. Change other parameters in the **Parameter\Maintenance** (pg. 19), **Parameter\User** (pg. 22), or **Station & User** (pg. 27) tabs, if desired.

7. Click **OK**.

8. Change parameters in the Main Window (pg. 14), if desired.

9. Click **Update** and **Yes** in the window that appears.

10. New parameters are uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

11. If you changed the serial number, user ID, or station ID in the Main Window, click **Update ID** and **Yes** in the window that appears.

12. The ID information is uploaded to the 04 Series. Click **OK** in the confirmation window once the upload is complete.

Station and User Tab

Use the **Station & User** tab to define custom user IDs and station IDs.

1. Launch the 04 Series Setup Program as described on pg. 9.

2. Connect an 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Detail Settings** and then click on the **Station & User** tab.

5. If you do not currently have any user-defined User IDs or Station IDs programmed into the instrument, the screen appears as shown below.
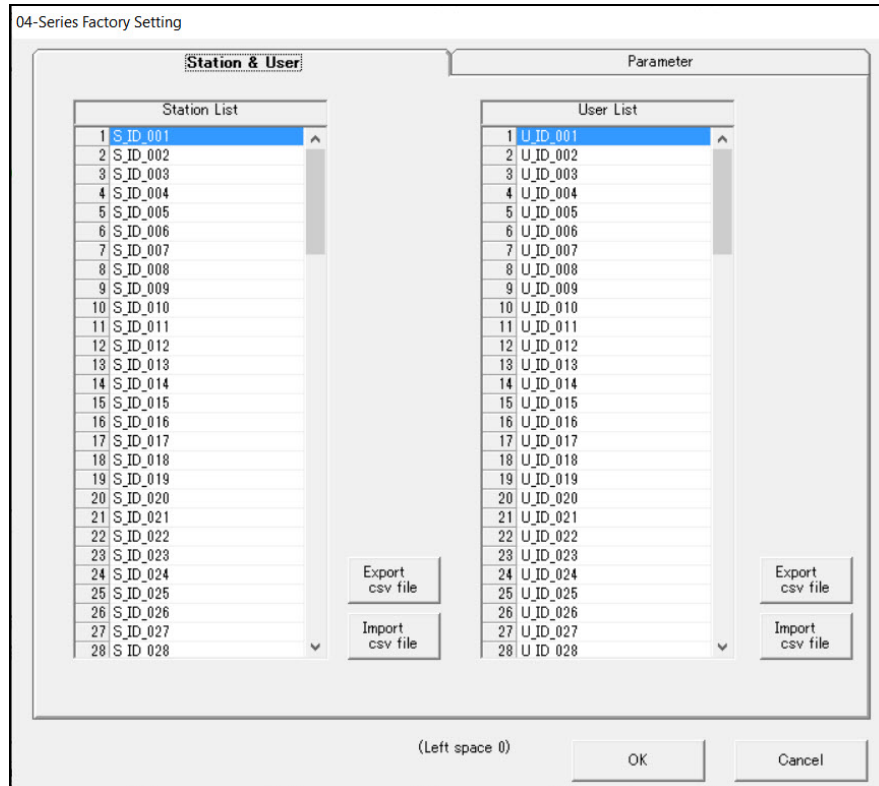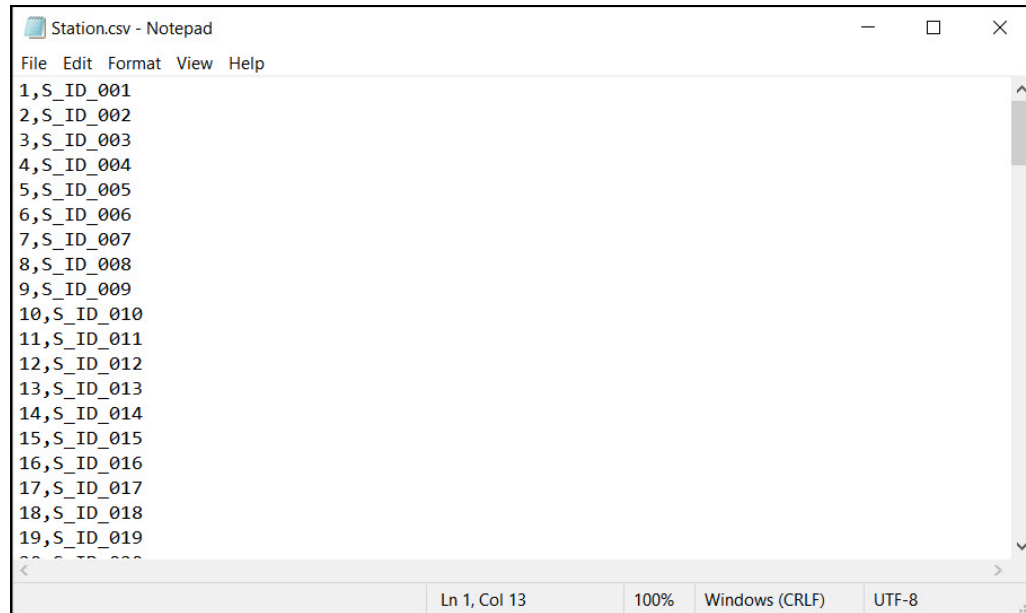

**Figure 11: Station & User Tab with Factory IDs**

6. Click the appropriate **Export csv file** button. The following example shows how to edit Station IDs.

7. Navigate to the file storage location, type in a file name, click **Save**, and then click **OK** in the export confirmation window that appears.

8. Open the .csv file in a word processing program such as Word, WordPad, or Notepad.

Figure 12: Station ID .csv File Opened in Notepad

9. Any existing Station or User IDs are displayed. Factory-loaded Station or User IDs have a SID_XXX or UID_XXX format.

10. Delete the existing name and replace it with the desired name. The name can be up to 16 characters long and may be any <u>uppercase letter</u> or <u>number</u>. However, only 8 characters are visible on the instrument screen. If you intend to use the instrument's Display Mode to switch between user and station IDs, make sure that the first 8 characters of each ID are unique.
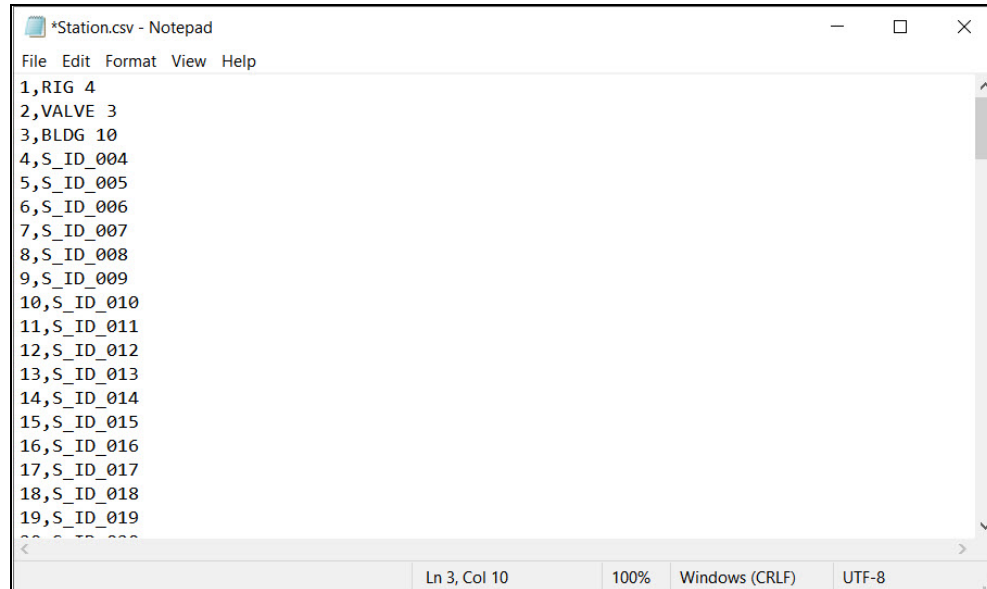
**Figure 13: Station ID .csv File Opened in Notepad**

11. Save the file.

12. Click the appropriate **Import csv file** button.

13. Select the file you want to import and click **Open**.
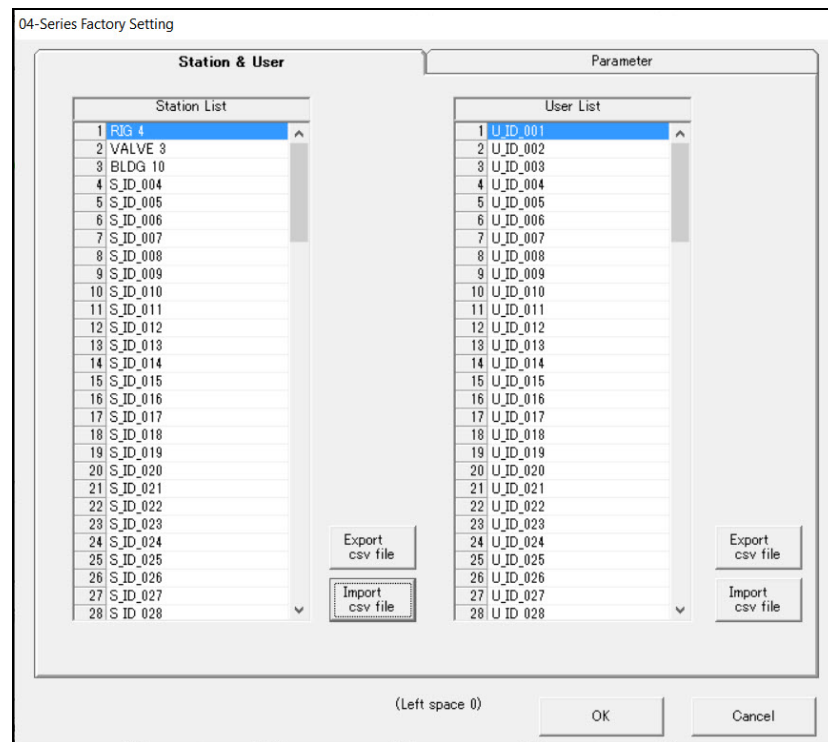
**Figure 14: Station & User Tab with Custom IDs**

14. If an ID in the imported file contains an unsupported character (like lowercase letters or a symbol), the ID will be highlighted in red. You must fix the unsupported character in the .csv file and re-import the file to clear the error and continue.
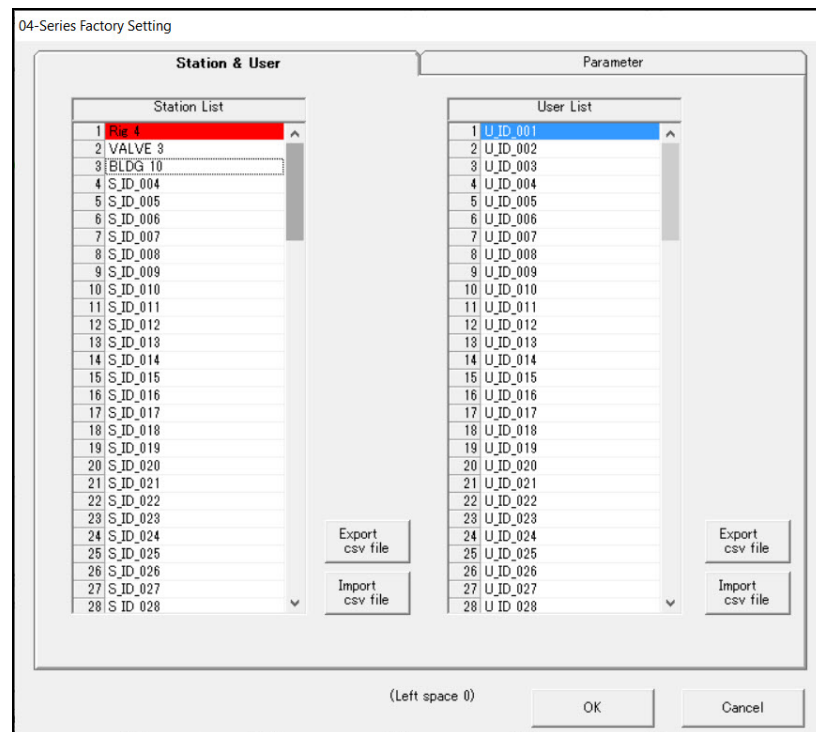
Figure 15: Station & User Tab with Invalid Custom ID

15. Click **OK** to save changes and return to the Set window.

16. The new station and user ID lists are now visible in the Main Window. Use the drop down menu to select a current station and user ID.
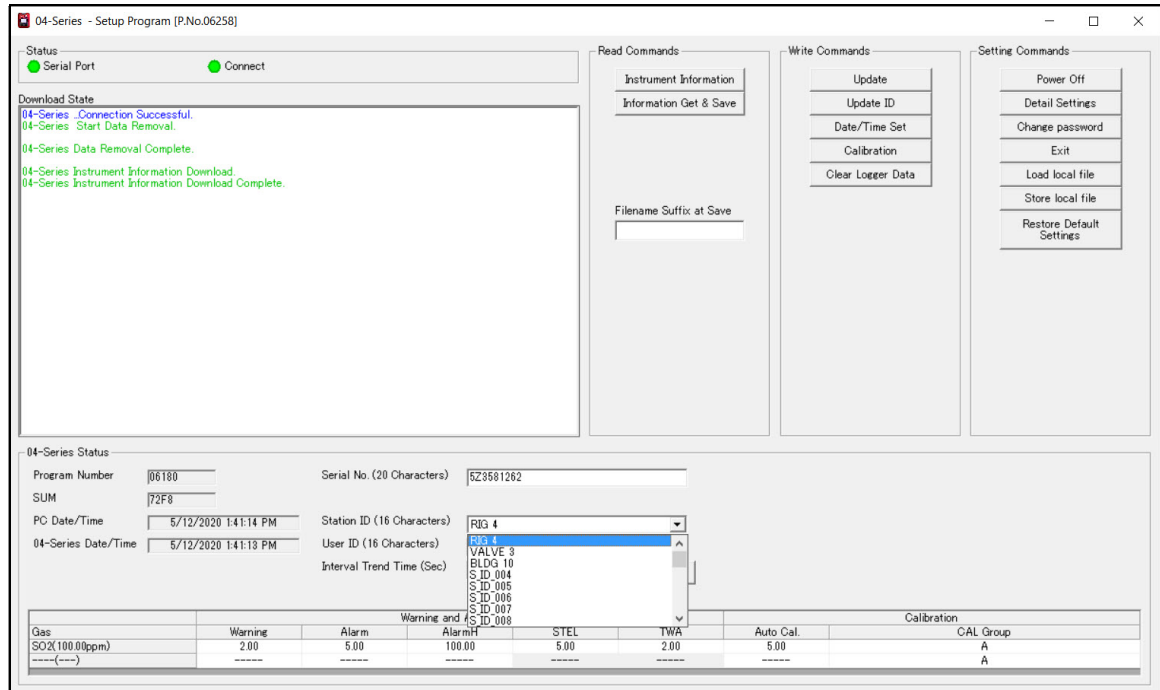
Figure 16: Station ID Selection in Main Window

17. Click **Update ID** and then **Yes** in the confirmation window to upload the changes to the instrument.

Chapter 6: Using .seq Files to Quickly Load Instrument Parameters

Parameter configuration files (.seq files) contain instrument parameters (alarm points, bump test settings, etc.) from a specific configuration. A configuration file can be loaded into an instrument to quickly set the instrument to the desired parameters. Configuration files are most useful to customers who want to set a lot of instruments up with exactly the same parameter settings.

A parameter configuration file can also be used to restore settings in case a factory default ever needs to be done.
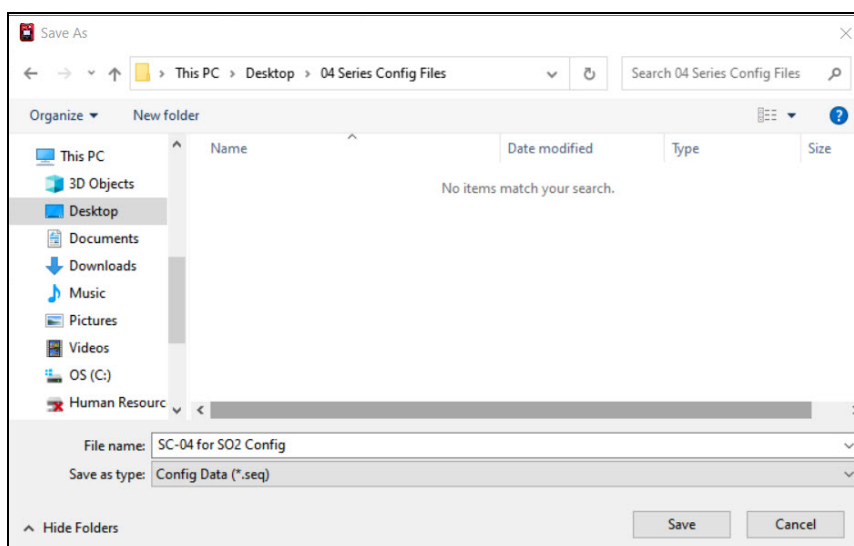
Saving a Configuration File

Saving a configuration file saves information like alarm points and bump test settings but does not save the serial number, user ID, or station ID.

1. Launch the Setup Program as described on pg. 9.

2. Connect the 04 Series as described on pg. 11.

3. Click **Instrument Information** to retrieve the instrument's parameters. The program indicates that it is downloading the parameters.
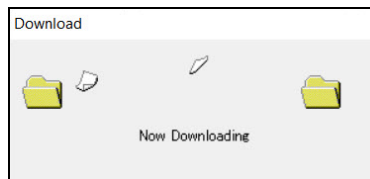
4. If necessary, view or change any instrument parameters as described in "Chapter 4: Changing Instrument Parameters (Main Window)" on page 14 and "Chapter 5: Changing Instrument Parameters (Detail Settings Window)" on page 19.

5. Click **Store local file**. The Save As Window appears.

6. Navigate to the location where you want to save the file.

Figure 17: Save As Window

7. Type in a file name.

8. Click **Save**. The program saves the file and returns to the Main Window.

Loading a Configuration File

Loading a configuration file into an instrument changes information like alarm points and bump test settings and does <u>not</u> change the serial number, user ID, or station ID.

1. Launch the Setup Program as described on pg. 9.

2. Connect the 04 Series as described on pg. 11.

3. Click **Load local file**.

4. Navigate to the location of the file you wish to load.
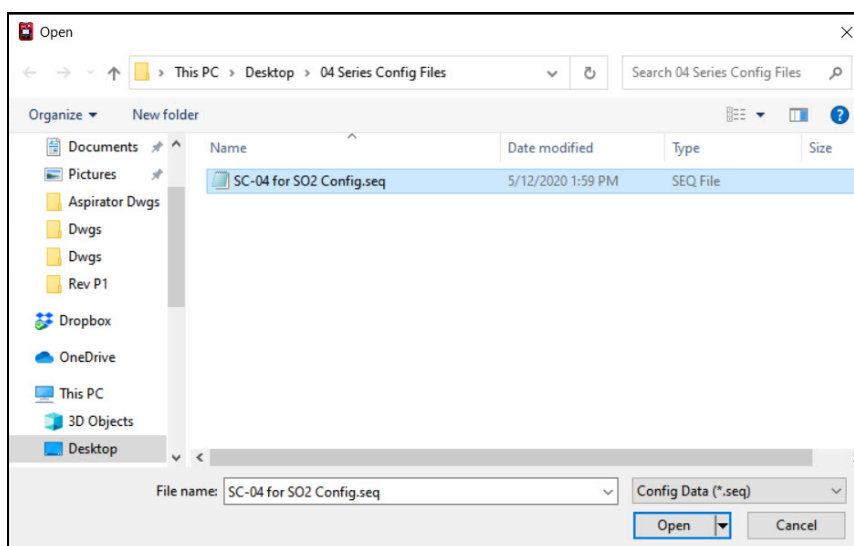
Figure 18: Open Window

5. Select the file you wish to load and click **Open**. The program loads the configuration file and displays all of the parameter settings in the Main Window and the Detail Settings Window.

6. Click **Update** and **Yes** in the window that appears.

7. The program begins uploading the configuration file to the instrument.
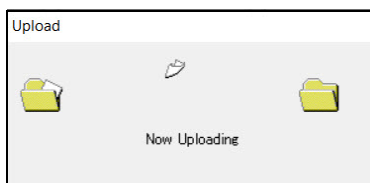
8. Click **OK** when the upload is complete. The program returns to the Main Window. The instrument's parameters have been updated to match those in the configuration file.

Chapter 6: Using .seq Files to Quickly Load Instrument Parameters • 35
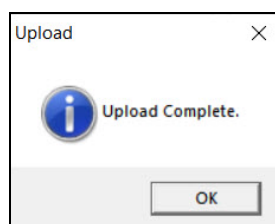
Chapter 7: Calibration

Materials

- Calibration gas cylinder

Table 5: Calibration Gas Concentration Limits

Channel	Min. Cal. Gas Concentration	Max. Cal. Gas Concentration
Oxygen	0.0%	18.0%
Hydrogen Sulfide	1.0 ppm	200.0 ppm
Carbon Monoxide	15 ppm	2,000 ppm
Hydrogen Cyanide	0.9 ppm	30.0 ppm
Nitrogen Dioxide	0.50 ppm	20.00 ppm
Phosphine	0.05 ppm	20.00 ppm
Sulfur Dioxide	0.50 ppm	100.00 ppm

- 0.25 LPM fixed flow regulator
- Non-absorbent tubing
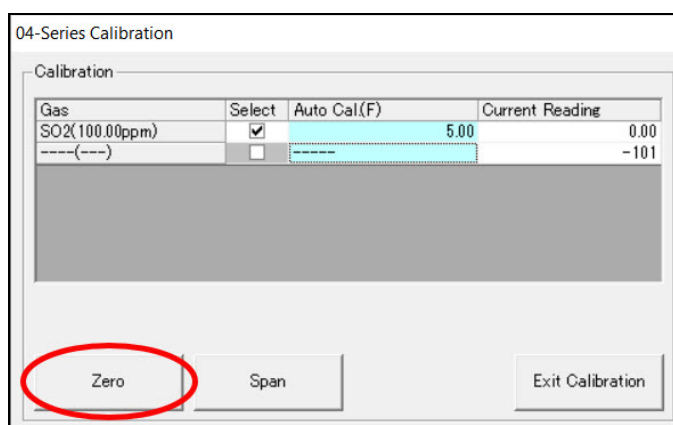- Calibration cup

Procedure

To fully calibrate the sensors, you must do a fresh air adjustment <u>and</u> a span adjustment.

1. Launch the Setup Program as described on pg. 9.

2. Connect the 04 Series as described on pg. 11.

3. Download instrument parameters as described on pg. 12.

4. Click **Calibration** in the **Write Commands** section of the main window.

5. If the 04 Series is in a fresh air environment (environment free of combustible and toxic gases and of normal oxygen content, 20.9%), ***make sure the 04 Series has been turned on for at least 45 seconds*** and then continue to step 7.

6. If the 04 Series is <u>not</u> in a fresh air environment (environment free of combustible and toxic gases and of normal oxygen content, 20.9%):

    a. Confirm that the regulator knob is turned all the way clockwise. Screw the 0.25 LPM fixed flow regulator onto a zero air cylinder.

    b. Install the calibration cup onto the 04 Series. Hold the 04 Series with one hand while pushing the calibration cup on to keep the IrDA connection intact. Make sure the calibration cup is oriented as shown in the figure below.
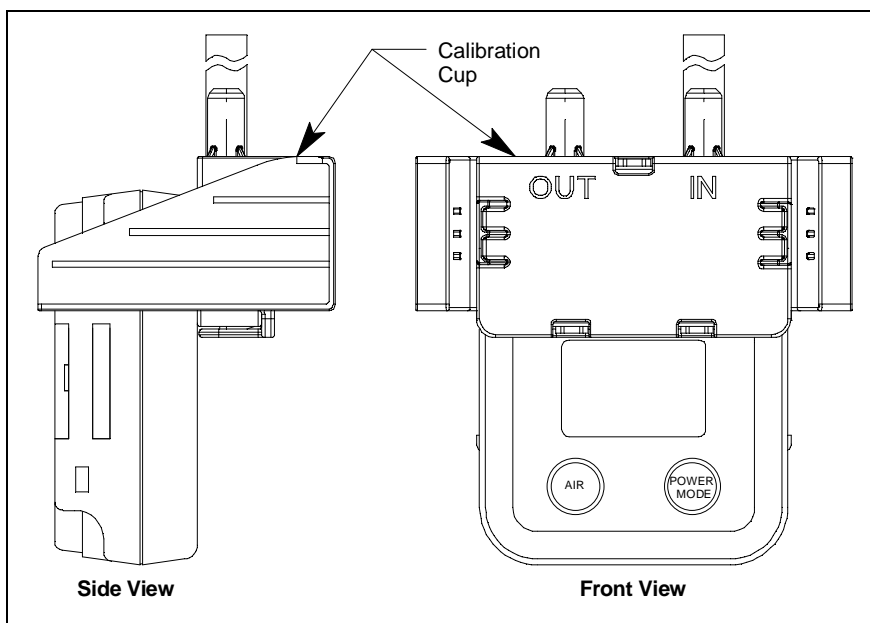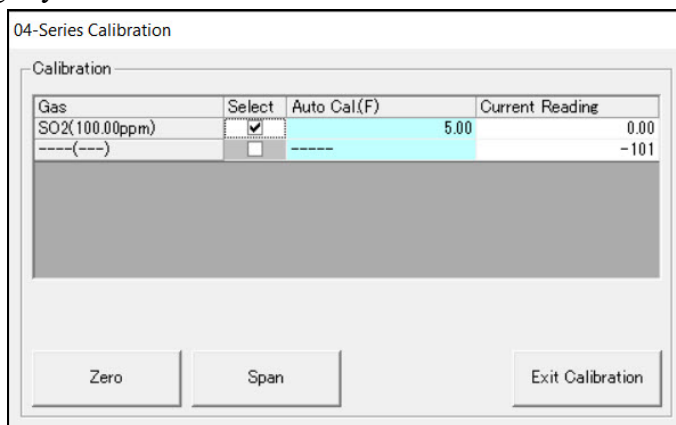

    c. Use tubing to connect the regulator to the inlet of the calibration cup.

    d. Turn the regulator knob counterclockwise to open the regulator.

    e. Allow zero air to flow for 1 minute then continue to step 7.

7. Click **Zero** to adjust the zero reading. The example below shows an SC-04 for SO_2.

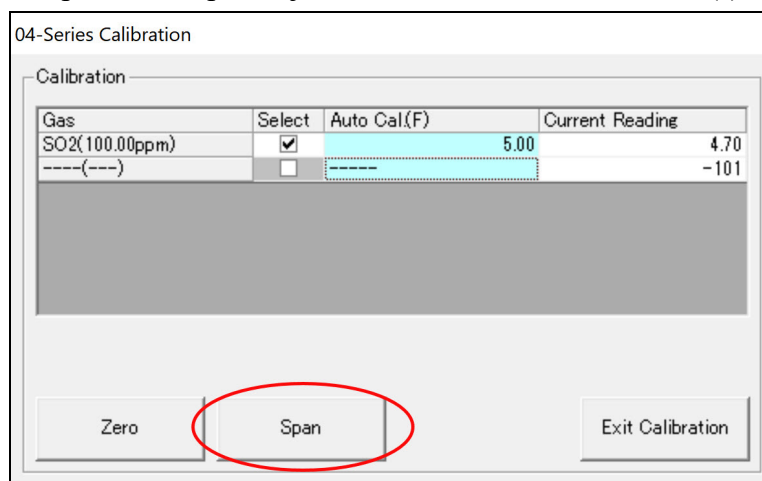8. Click **OK** in the result window that appears.
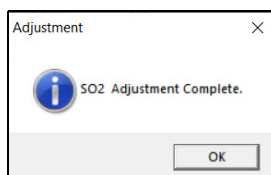
9. If you applied zero air, turn the regulator knob clockwise to close the regulator. Unscrew the regulator from the zero air cylinder.

10. Be sure the value(s) shown in the **Auto Cal.** column of the Calibration Window match the value(s) shown on your calibration gas cylinder(s). If it does not match, double click the auto cal value and type in a value that does match. Changing the auto cal value in this window does <u>not</u> change the instrument's auto cal value. To change the instrument's auto cal value, use the Main Window (see pg. 14).

11. Be sure the gas you want to calibrate is selected.

12. If not already installed for zero air application, install the calibration cup onto the 04 Series. Hold the 04 Series with one hand while pushing the calibration cup on to keep the IrDA connection intact. Make sure the calibration cup is oriented as shown in the figure below.
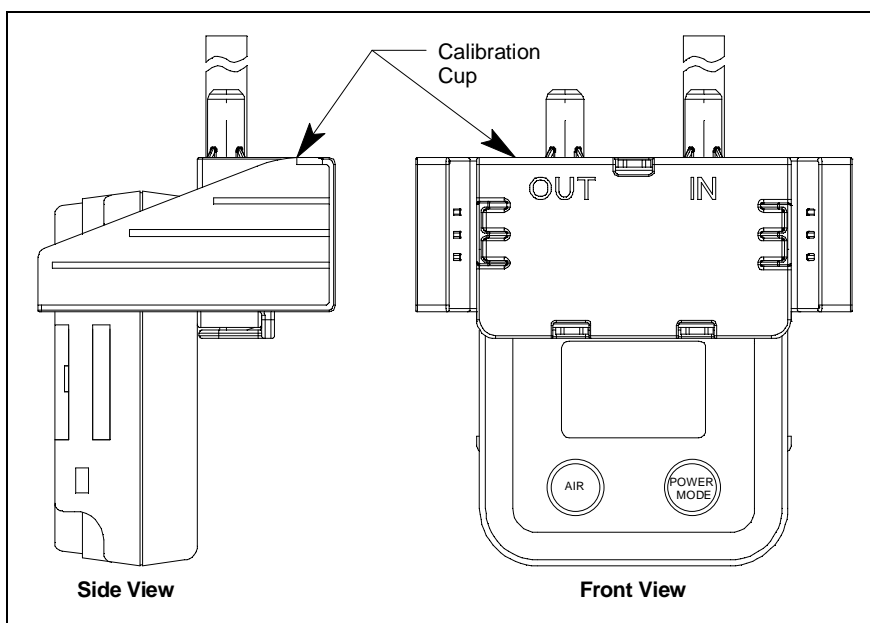
13. If necessary, use the tubing to connect the regulator to the inlet of the calibration cup.

14. For toxic gas cylinders (like HCN or PH_3), it is important to vent the regulator while installing it onto the cylinder. Venting the regulator during installation helps prevent air from getting into the cylinder and degrading the gas. Open the regulator by turning the knob counterclockwise and install it onto the cylinder.

15. Allow the gas to flow for 1 minute. The gas readings are shown in the **Current Reading** column.

16. Click **Span** to perform a span adjustment on the selected channel(s).

17. Click **OK** in the result window that appears. If the span adjustment fails, the gas reading displays in the result window.

| Span adjustment failed | Span adjustment passed |
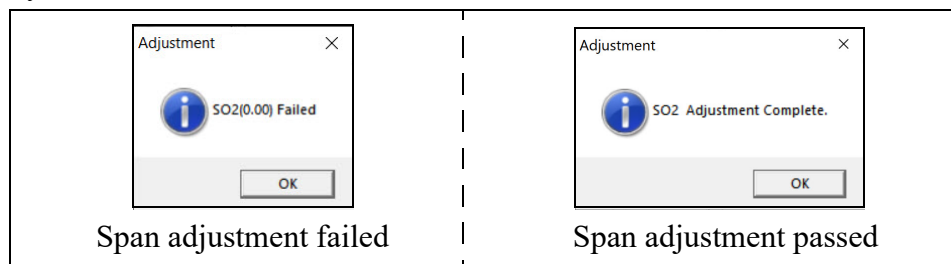
18. Turn the regulator knob clockwise to close the regulator.

19. If necessary, repeat step 10 through step 18 for the other gas channel.

20. Unscrew the regulator from the cylinder and remove the calibration cup from the 04 Series.

21. Click **Exit Calibration** to return to the Main Window.

Chapter 8: Spare Parts List

Table 6: Spare Parts List

Part Number	Description
47-5084	USB/IrDA adapter, Legasic, module only (for use with all premier portables)
47-5084RK-01	USB/IrDA adapter, Legasic, module and cable (for use with all premier portables)
47-5085RK	USB A to USB mini cable, 6 feet, for 47-5084RK USB/IrDA adapter
71-0526	04 Series Setup Program Operator's Manual (this document)
81-0000RK-51	Calibration cylinder, 200 ppm H_2 in air, 34 liter steel
81-0062RK-01	Calibration cylinder, 50 ppm CO in N_2, 34 liter steel
81-0062RK-03	Calibration cylinder, 50 ppm CO in N_2, 103 liter
81-0064RK-01	Calibration cylinder, 50 ppm CO in air, 34 liter steel
81-0064RK-03	Calibration cylinder, 50 ppm CO in air, 103 liter
81-0076RK-01	Calibration cylinder, zero air, 34 liter steel
81-0076RK-03	Calibration cylinder, zero air, 103 liter
81-0078RK-01	Calibration cylinder, 100% nitrogen, 34 liter steel
81-0078RK-03	Calibration cylinder, 100% nitrogen, 103 liter
81-0151RK-02	Calibration cylinder, 25 ppm H_2S in nitrogen, 58 liter
81-0151RK-04	Calibration cylinder, 25 ppm H_2S in nitrogen, 34 liter aluminum
81-0170RK-02	Calibration cylinder, 5 ppm SO_2 in nitrogen, 58 liter
81-0170RK-04	Calibration cylinder, 5 ppm SO_2 in nitrogen, 34 liter aluminum
81-0180RK-02	Calibration cylinder, 10 ppm NO_2 in nitrogen, 58 liter
81-0180RK-04	Calibration cylinder, 10 ppm NO_2 in nitrogen, 34 liter aluminum
81-0186RK-02	Calibration cylinder, 5 ppm PH_3 in nitrogen, 58 liter
81-0196RK-02	Calibration cylinder, 10 ppm HCN in nitrogen, 58 liter
81-0196RK-04	Calibration cylinder, 10 ppm HCN in nitrogen, 34 liter aluminum
81-1050RK-25	Regulator, fixed flow, 0.25 LPM, with gauge and knob, for 17 liter and 34 liter steel cylinders (cylinders with external threads)

Table 6: Spare Parts List

Part Number	Description
81-1051RK-25	Regulator, fixed flow, 0.25 LPM, with gauge and knob, for 34 liter aluminum, 58 liter, and 103 liter cylinders (cylinders with internal threads)
81-1146	Calibration cup
81-CO04C-LV	Calibration kit: 34 liter steel cylinder of 50 ppm CO in N_2, 34 liter steel cylinder of 200 ppm H_2, regulator, tubing, calibration cup, case
81-SC04HCN-LV	Calibration kit for HCN SC-04: 34 liter aluminum cylinder of 10 ppm HCN in N_2, regulator, tubing, calibration cup, case
81-SC04NO2-LV	Calibration kit for NO_2 SC-04: 34 liter aluminum cylinder of 10 ppm NO_2 in N_2, regulator, tubing, calibration cup, case
81-SC04PH3-LV	Calibration kit for PH_3 SC-04: 34 liter aluminum cylinder of 0.5 ppm PH_3 in N_2, regulator, tubing, calibration cup, case
81-SC04SO2-LV	Calibration kit for SO_2 SC-04: 34 liter aluminum cylinder of 5 ppm SO_2 in N_2, regulator, tubing, calibration cup, case