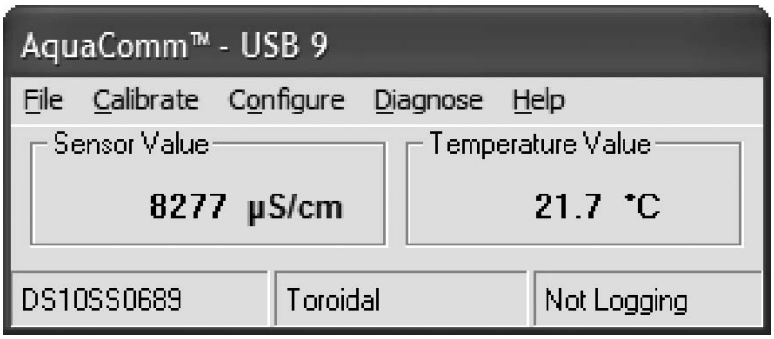
Thermo Scientific AquaSensors™ DataStick™ AquaComm™ and USB Communications

User Guide



Thermo SCIENTIFIC

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Outside the United States call 978.232.6000 or fax 978.232.6031.
In Europe, the Middle East and Africa, contact your local authorized dealer.
Visit us on the web at www.thermo.com/processwater

RS-232 Communications Adapter Part Numbers:

- CA11A: 316 Stainless Steel Housing
- CA21A: CPVC Housing
- CA31A: PEEK® Housing
- CA41A: Ryton® Housing

USB Communications Adapter Part Numbers:

- CA18R: 316 Stainless Steel Housing
- CA28R: CPVC Housing
- CA38R: PEEK® Housing
- CA48R: Ryton® Housing

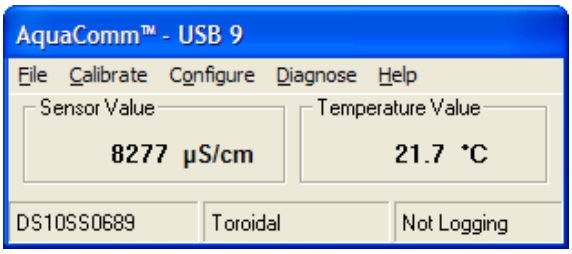
1 Introduction

The Thermo Scientific AquaSensors AquaComm is a Microsoft Windows®-based program that provides a full-featured user interface for any USB- or RS-232-equipped DataStick measurement system.

AquaComm translates user input into Thermo Scientific AquaSensors Open ASCII Protocol Commands and sends them to the DataStick. It translates DataStick responses and presents them to the user.

An instance of AquaComm can be opened for each DataStick connected to the computer.

AquaComm allows calibration, configuration and diagnosis of the connected DataStick as well as data logging. The Calibrate and Configure menus change automatically based on the type of Sensor Head installed in the DataStick.



AquaComm can be used in the chemistry lab to calibrate Sensor Heads used in the field. It can also be used for measurement networks and battery-operated laptops and handheld computers. It is compatible with any USB- or RS-232-equipped DataStick, and any Windows 2000 or XP computer with a USB or serial (COM) port.

For AquaComm operational details, download the DataStick manual (MAN011DS) in the DataStick section of the Thermo Scientific AquaSensors Website.

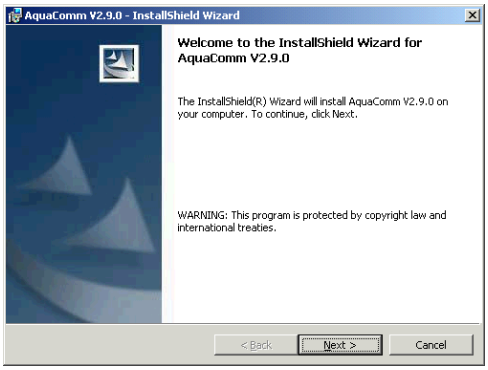
2 Installing AquaComm™

The installation program for AquaComm is available by download from the Thermo Scientific AquaSensors Website or on CD.

When downloaded, AquaComm is packaged in a self-extracting ZIP file. When this file is executed its contents will be extracted to the temporary folder (TEMP= folder) or a folder of your choice. Locate setup.exe in the extraction folder and execute it. Setup.exe will start InstallShield® which will automatically install AquaComm and provide a shortcut to AquaComm on the Desktop. Follow the InstallShield® prompts and make a note of the destination folder chosen during installation. The location of this folder might be needed the first time a USB-equipped DataStick is connected to the computer.

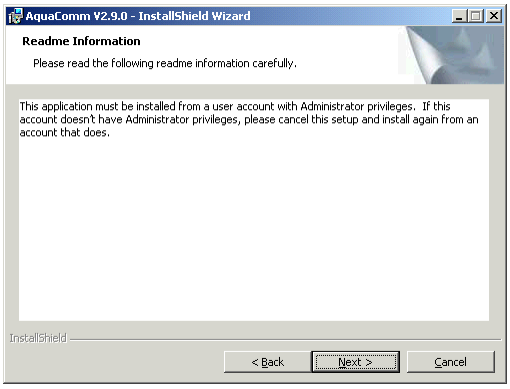
Important: Be sure the account from which AquaComm is installed has administrator privileges.

If the AquaComm installation is on a CD, insert the CD into any computer that runs Microsoft Windows® 2000 or XP. The installation should begin automatically and will show the following welcome screen.



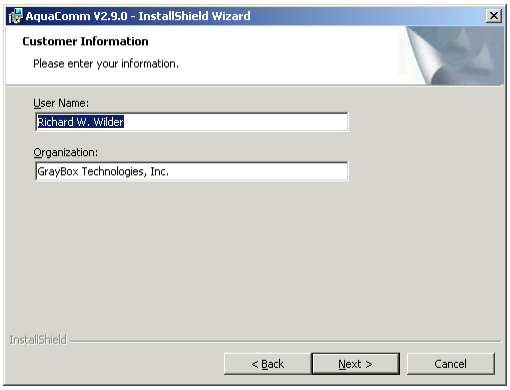
Click NEXT to proceed with the AquaComm software installation.

The following screen reminds the user that the installation must be done from an account with administrator privileges.

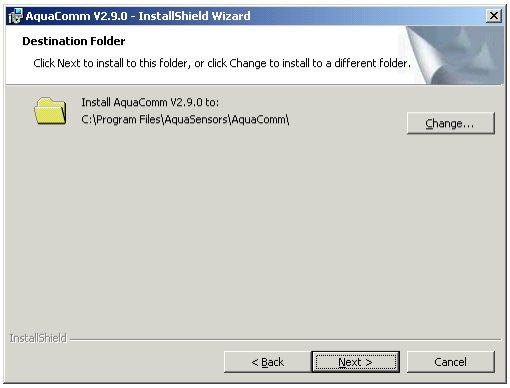


Click NEXT if the account has administrator privileges. Otherwise click CANCEL and restart the installation after logging on as a user with administrator privileges.

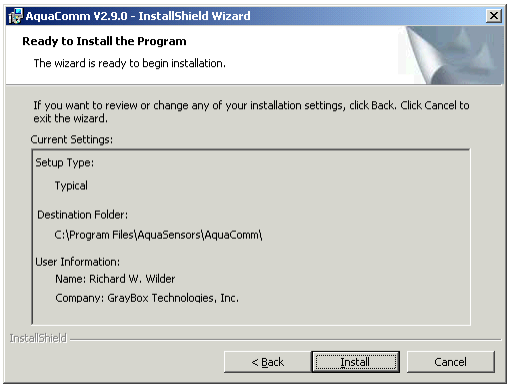
Enter User Name and Organization information and click NEXT.



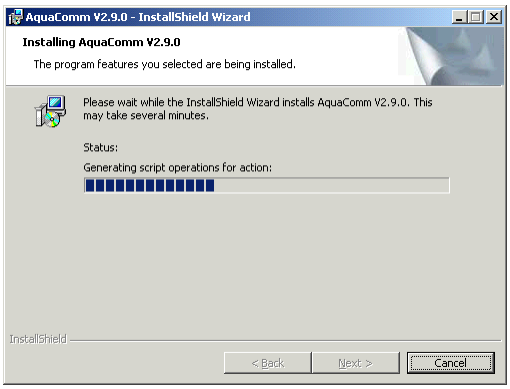
Click NEXT to install the AquaComm program in C:\Program Files\AquaSensors\AquaComm or click CHANGE to install to a different folder.



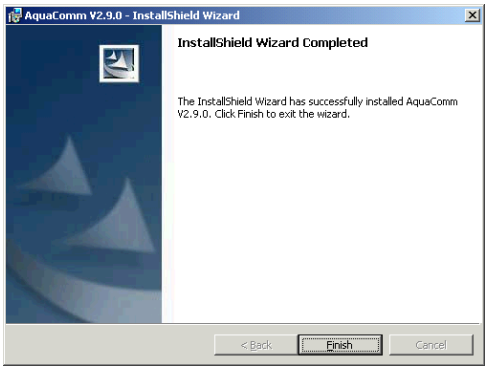
The following screen gives the user an opportunity to review Destination Folder and User Information before installing AquaComm.



The following screen reports the installation progress. The NEXT button will not become active until the installation process is complete.

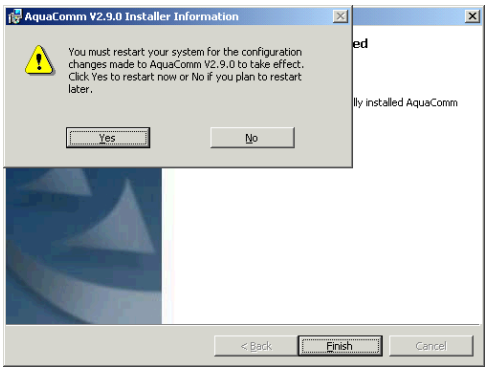


Clicking the NEXT button will display a screen that shows the software was successfully installed.



Click FINISH.

You may have a window pop up to ask you to restart your system. Click YES.



After the computer restarts, the AquaComm icon will be visible on the Desktop.

Before running AquaComm for the first time, follow the instructions in Section 3, USB Communications Adapter Driver, to install the driver.

2.1 Re-installing AquaComm

Always uninstall AquaComm before re-installing it. See Section 6, Uninstalling AquaComm, for more information.

After uninstalling AquaComm, re-install it by following the procedure described in Section 2, Installing AquaComm™.

3 USB Communications Adapter Driver

Important: Be sure to install AquaComm on the computer before connecting a USB-equipped DataStick. See Section 2, Installing AquaComm™, for more information.

When a USB-equipped DataStick is connected to the computer for the first time, a driver for the USB Communications Adapter must be installed and a virtual COM port assigned to the Adapter. Once the driver is installed, the computer will remember which virtual COM port was assigned to the Adapter and re-assign it the next time the Adapter is connected.

Important: Beginning with AquaComm V2.9.4, the USB Communications Adapter Driver is pre-installed on the computer when AquaComm is installed and no user intervention should be required. Not all configurations of the Windows operating system support driver pre-installation, however. In the event that your configuration doesn't support driver pre-installation, follow the procedure described in Section 3.3, Manually Installing the Driver.

If your computer has Windows 2000 on it, follow the procedure in Section 3.1.

If your computer has Windows XP on it, follow the procedure in Section 3.2.

3.1 Windows 2000 Computers

Connect a USB-equipped DataStick to the Windows 2000 computer. The new hardware will be found as shown in Figure 1. The DataStick can be used after the new hardware has been found.

Figure 1: Windows 2000 finds a USB-equipped DataStick connected to the computer for the first time.

Before starting AquaComm, follow the instructions in Section 4, Starting AquaComm™ for the First Time.

3.2 Windows XP Computers

Connect a USB-equipped DataStick to the Windows XP computer. A balloon will appear above the System Tray after a short time indicating that the DataStick is ready to be used as shown in Figure 2.

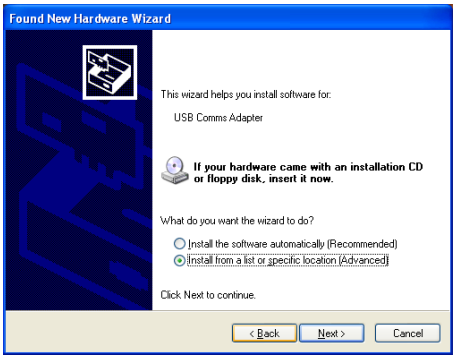
Figure 2: Windows XP indicates that the USB-equipped DataStick is ready to be used.

Before starting AquaComm, follow the instructions in Section 4, Starting AquaComm™ for the First Time.

3.3 Manually Installing the Driver

Important: Not all configurations of the Windows operating system support driver pre-installation. In the event that your configuration doesn't support driver pre-installation, follow the procedure below.

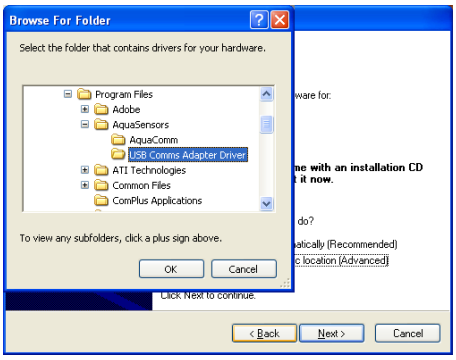
When a USB-equipped DataStick is connected to the computer, the computer will detect the new hardware and display the Found New Hardware Wizard.



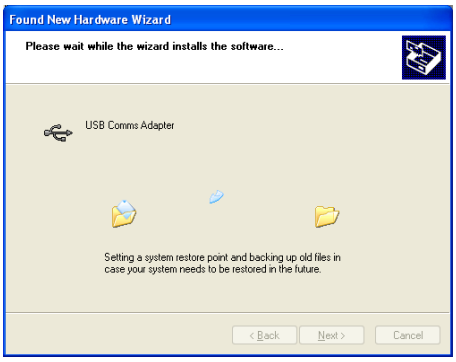
Select "Install from a list or specific location" and click NEXT.

Browse to the folder called C:\Program Files\AquaSensors\USB Comms Adapter Driver, select it, and click OK.

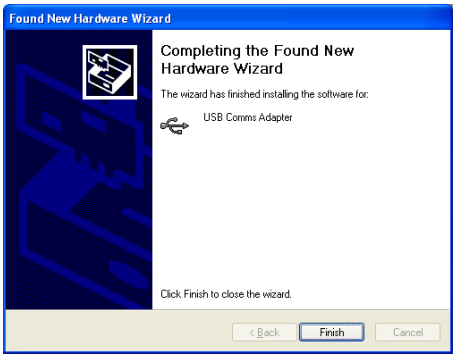
Click NEXT.



The USB Communications Adapter Driver will be installed.



Click FINSH to complete the USB installation.



Important: At this point, the procedure described above will be repeated. Follow the instructions above a second time.

At this point, manual installation of the USB Communications Adapter Driver is complete. Before starting AquaComm, follow the instructions in Section 4, Starting AquaComm™ for the First Time.

3.4 Determining which Virtual COM Port has been Assigned to a USB-Equipped DataStick

To determine which virtual COM port has been assigned to a USB-equipped DataStick, open the Control Panel and double-click on System as shown in Figure 3.

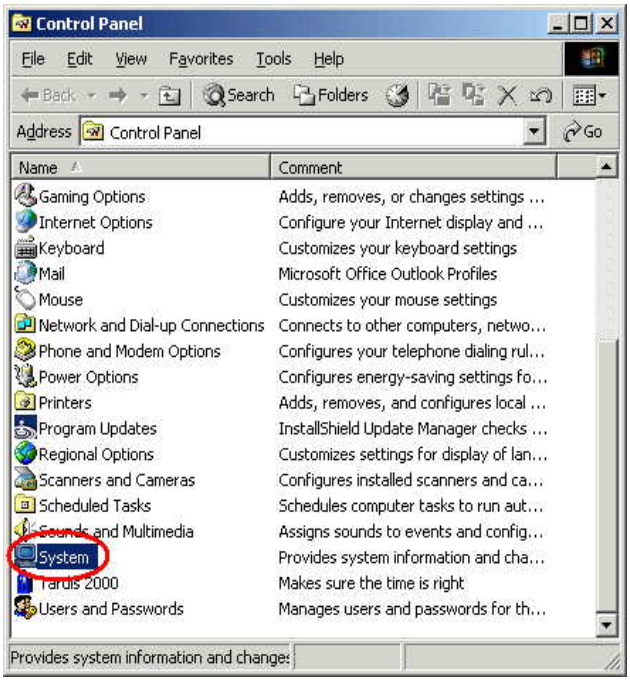


Figure 3: Double-click on the System entry on the Control Panel.

On the Hardware tab, click the Device Manager button as shown in Figure 4.

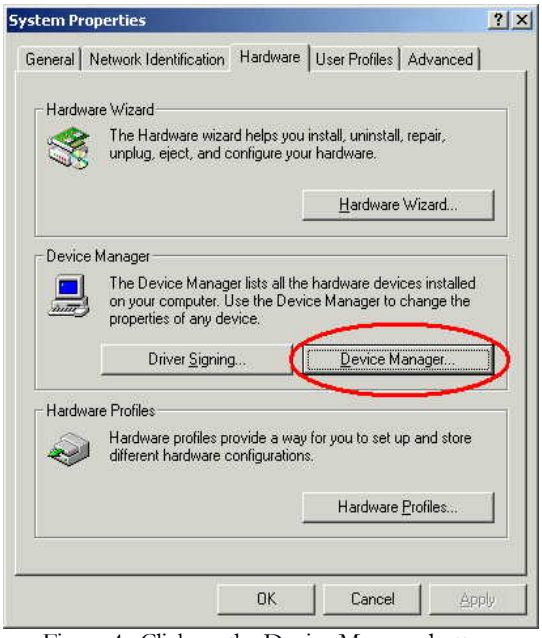


Figure 4: Click on the Device Manager button.

Expand the Ports (COM & LPT) entry in the Device Manager list. The virtual COM port that has been assigned to the USB-equipped DataStick is shown in parentheses as shown in Figure 5.

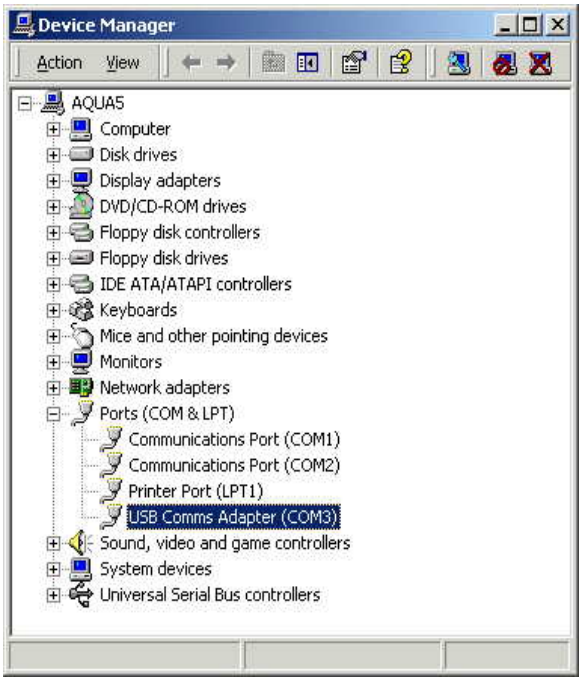


Figure 5: The virtual COM port assigned to this USB-equipped DataStick is COM3.

Select this virtual COM port when defining a connection using AquaConfig.

4 Starting AquaComm™ for the First Time

Before starting AquaComm for the first time, any firewall on the computer must be configured to allow AquaComm to use TCP ports.

Connect all RS-232- or USB-equipped DataSticks to the computer before starting AquaComm for the first time.

Important: Always close AquaComm before disconnecting USB-equipped DataSticks from the computer. AquaComm can be closed by clicking the FILE menu and selecting EXIT.

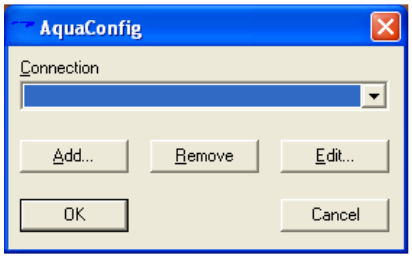
Start AquaComm by double-clicking on the icon on the Desktop.

AquaComm's behavior depends on the version of AquaComm being started. If starting AquaComm V2.9.3 or older, continue with Section 4.1.

If starting AquaComm V2.9.4 or newer, continue with Section 4.2.

4.1 Starting AquaComm V2.9.3 and Older

For AquaComm V2.9.3 and older, there are no defined DataStick connections, so AquaComm will start AquaConfig so that a connection can be defined.



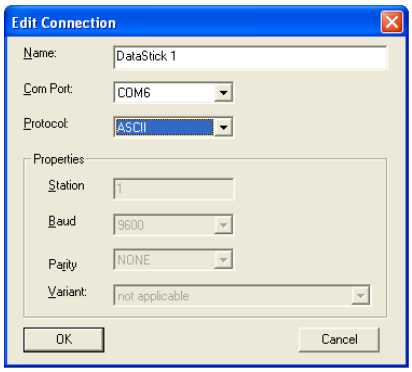
The connection field will be blank. Click ADD to define a connection.

Enter a NAME for the connection, e.g., "COM3,9600,N,8,1" or "pH in Tank #8".

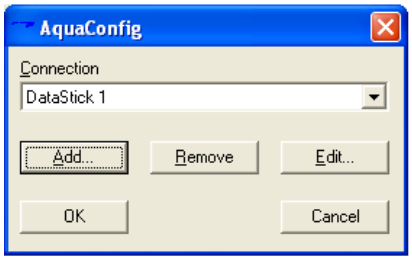
Use the Com Port pull-down menu to select the correct COM port to which the DataStick is connected. If using an RS-232-equipped DataStick, then select the physical COM port (usually COM1 or COM2). If using a USB-equipped DataStick, the COM port with the largest number is generally a virtual COM port that has been assigned to the DataStick.

Select the ASCII protocol. There are no Properties associated with the ASCII protocol, so the Properties will not be editable.

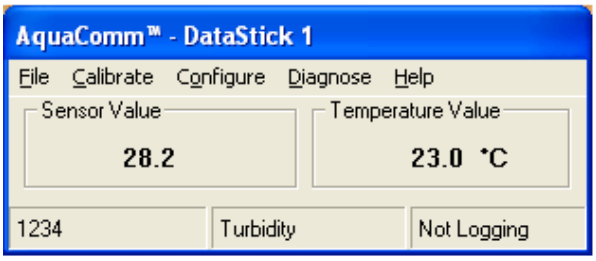
When the NAME, Com Port and Protocol are entered, click OK.



If an additional connection is to be made, click the ADD button and enter a NAME, Com Port, and Protocol for the additional connection. If no additional connections are to be made, select the desired connection in the Connection pull-down menu and click OK.



AquaComm will be started and it will display the Sensor Value and the Temperature Value obtained from the selected DataStick. The name of the connection defined by AquaConfig will be displayed in the title bar of AquaComm.



If a new connection is to be made while AquaComm is running, select FILE and NEW CONNECTION.

4.2 Starting AquaComm V2.9.4 and Newer

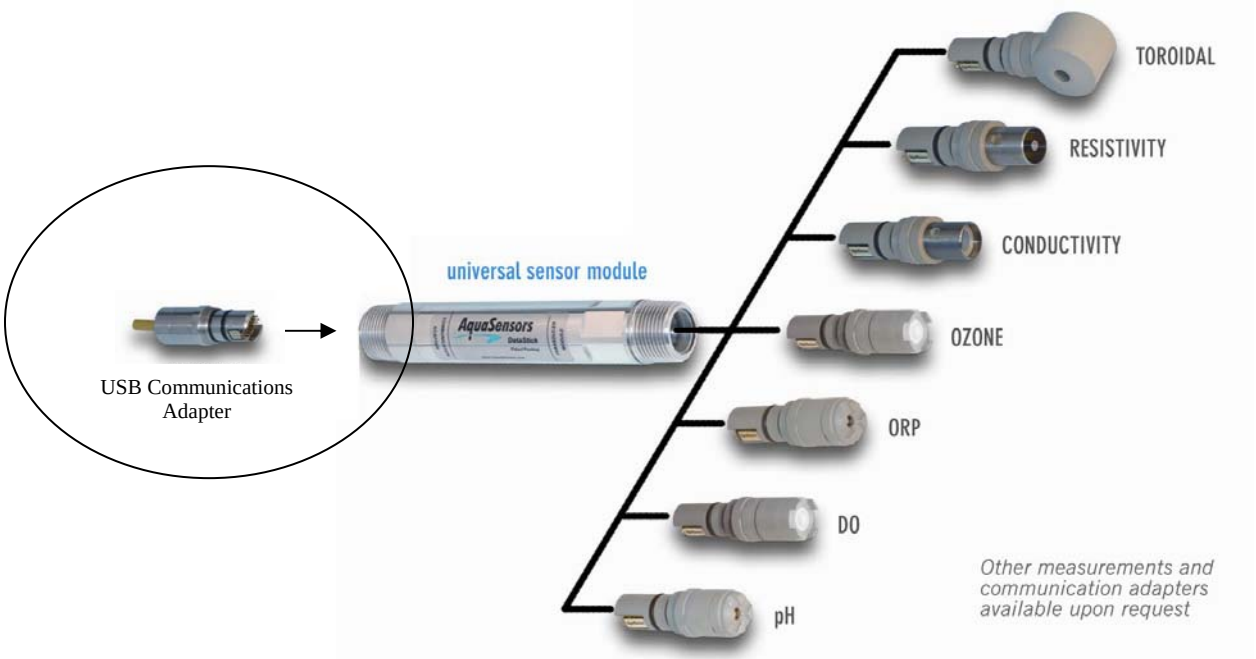
Beginning with AquaComm V2.9.4, a DataStick connection to COM3 is pre-defined. If a USB-equipped DataStick was assigned a virtual COM port of COM3 when it was connected to the computer, then AquaComm will display the Sensor Value and the Temperature Value obtained from the DataStick as shown in Figure 6. The name of the pre-defined connection will be displayed in the title bar of AquaComm.

Figure 6: AquaComm showing the data acquired from a USB-equipped DataStick.

If COM3 has not been assigned to a USB-equipped DataStick, then it will be necessary to define a connection using AquaConfig. See Section 4.1, Starting AquaComm V2.9.3 and Older, for more information.

5 Attaching the USB Communications Adapter to the DataStick

The USB Communications Adapter is keyed and plugs into the end of the DataStick Universal Sensor Module that is marked “Communications Adapter”.



Insert the USB Adapter until it bottoms out. Rotate it until it engages with the connector. Push the Adapter in gently, and then tighten the retaining ring with a 15/16-inch wrench. It is very important to tighten the retaining ring to ensure a reliable connection.

Retaining Ring Use a 15/16-inch wrench and rotate clockwise to tighten.

O-Ring Seal It should be free of dirt when inserted into the DataStick™.

Part Number (this side) and **Serial Number** (opposite side)

6 Uninstalling AquaComm

It may become necessary to uninstall AquaComm from the computer. If you're uninstalling AquaComm V2.9.3 or older, follow the procedure in Section 6.1.

If you're uninstalling AquaComm V2.9.4 or newer, follow the procedure in Section 6.2.

6.1 Uninstalling AquaComm V2.9.3 and Older

If it becomes necessary to uninstall AquaComm V2.9.3 or older, use Add/Remove Programs in the Control Panel as shown in Figure 7.

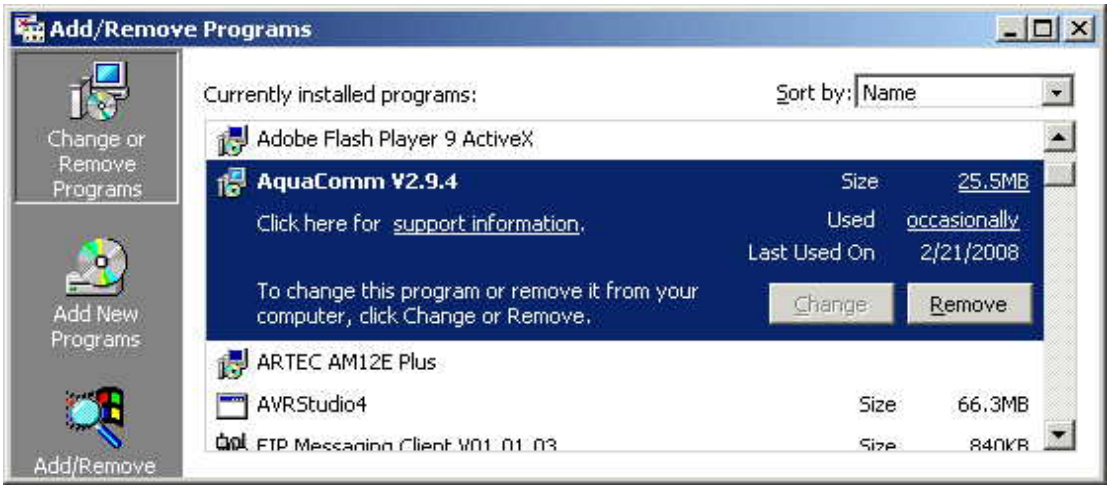


Figure 7: Uninstall AquaComm using Add/Remove Programs.

Then uninstall the FTDI USB Serial Converter Drivers using Add/Remove Programs as shown in Figure 8.

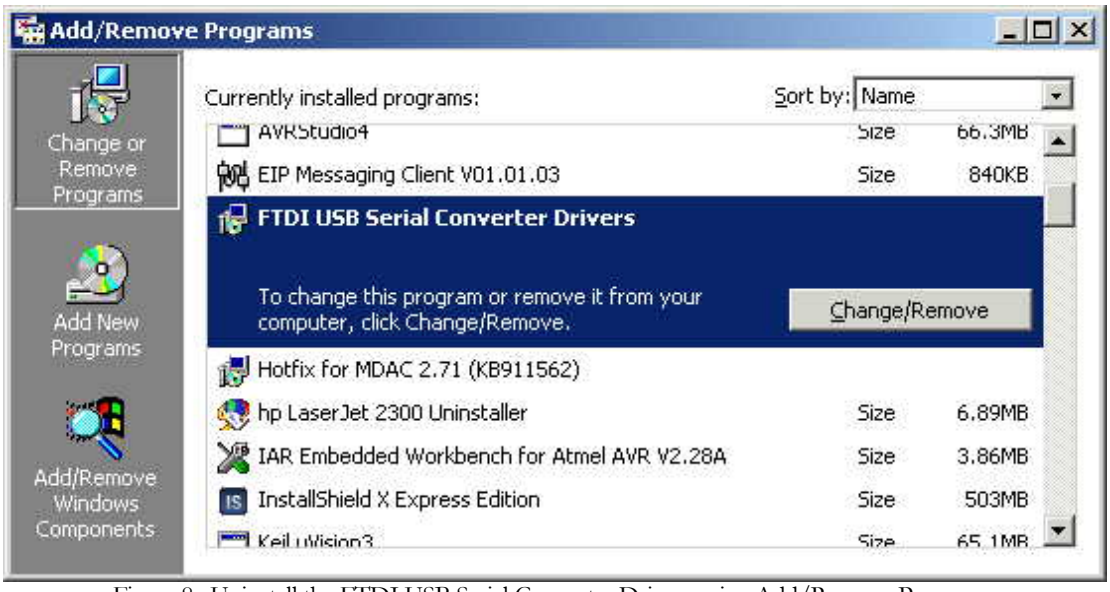


Figure 8: Uninstall the FTDI USB Serial Converter Drivers using Add/Remove Programs.

Then manually delete the AquaSensors folder under C:\Program Files as shown in Figure 9.

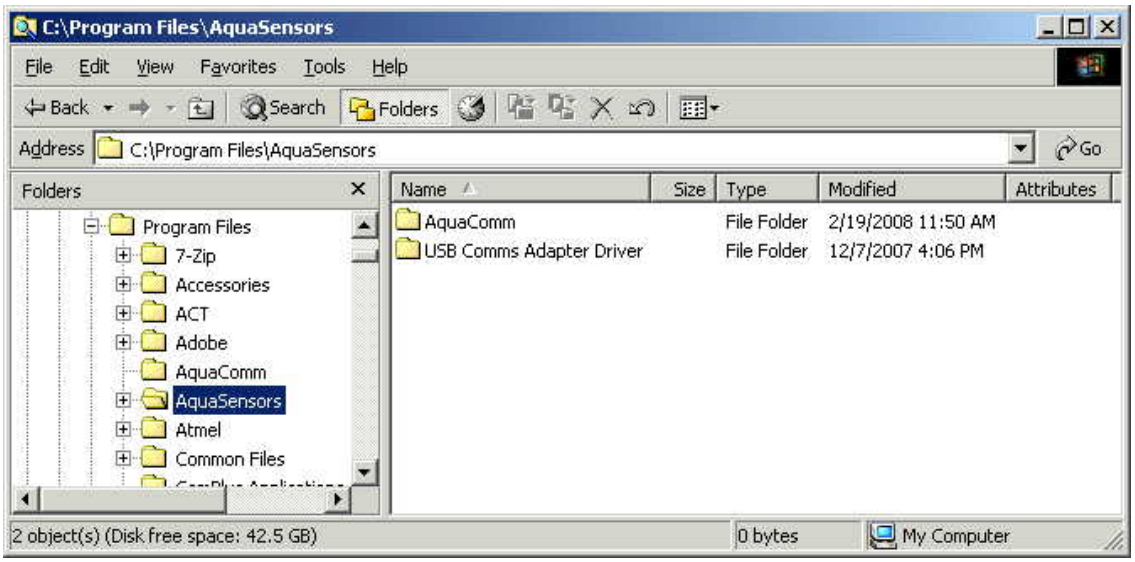


Figure 9: Delete the AquaSensors folder in the C:\Program Files folder.

This completes the uninstallation of AquaComm V2.9.3 or older.

6.2 Uninstalling AquaComm V2.9.4 and Newer

If it becomes necessary to uninstall AquaComm V2.9.4 or newer, use Add/Remove Programs in the Control Panel as shown in Figure 10.

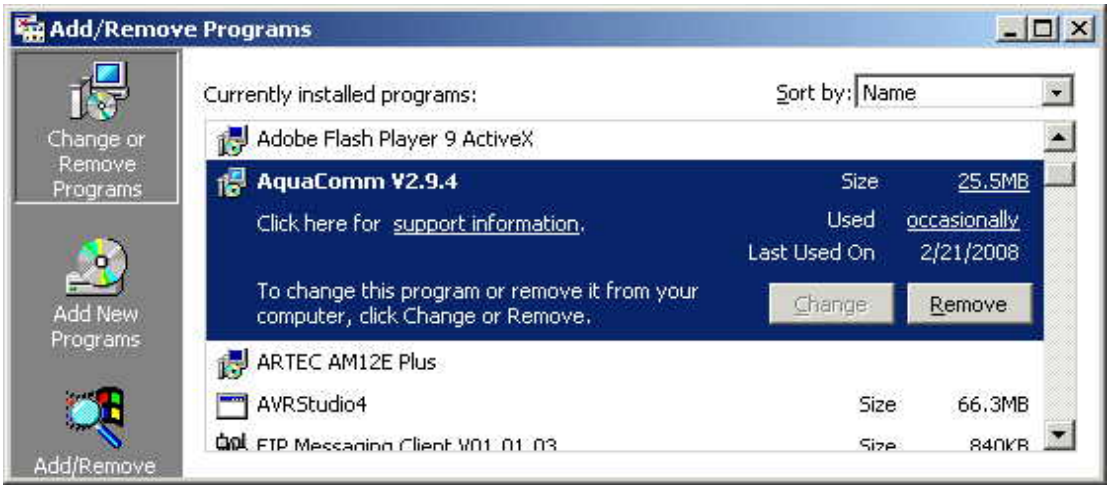


Figure 10: Uninstall AquaComm using Add/Remove Programs.

Then uninstall the two occurrences of the Windows Driver Package – FTDI CDM Driver Package as shown in Figure 11.

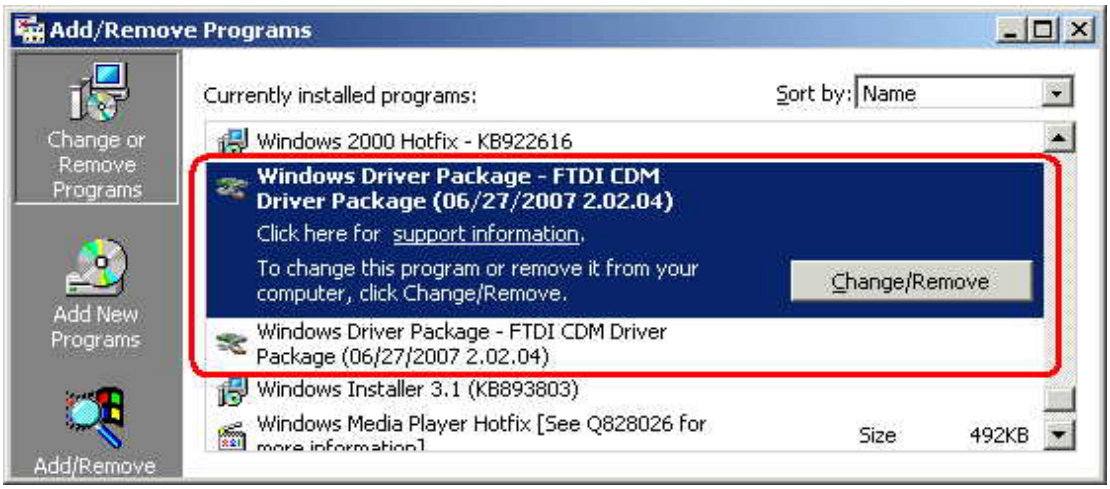


Figure 11: Uninstall two FTDI CDM Driver Packages using Add/Remove Programs.

Then manually delete the AquaSensors folder under C:\Program Files as shown in Figure 12.

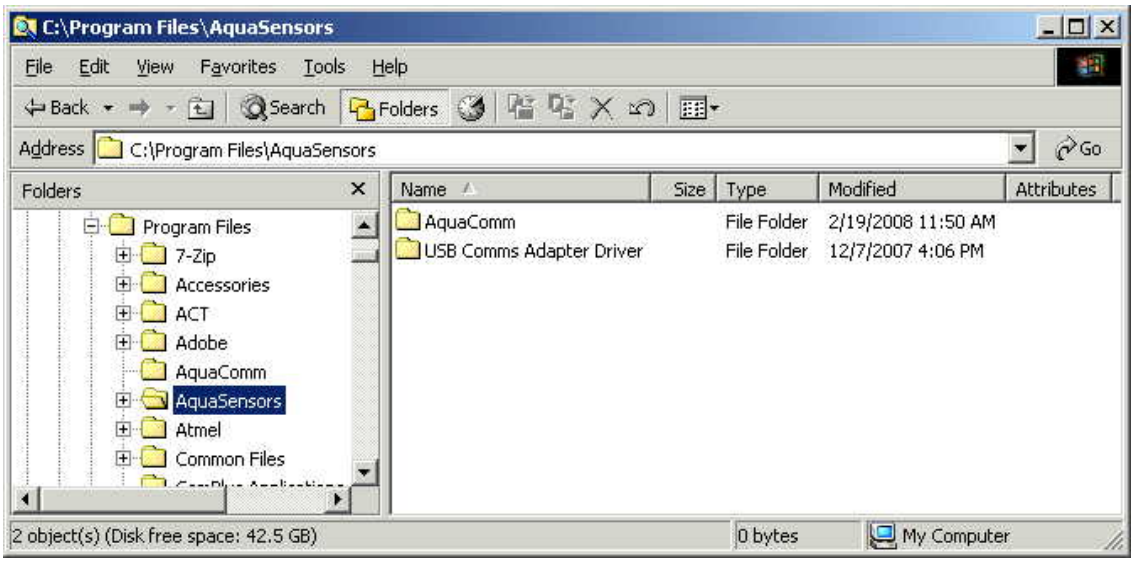


Figure 12: Delete the AquaSensors folder in the C:\Program Files folder.

This completes the uninstallation of AquaComm V2.9.4 or newer.

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