

Quick Reference Manual

iAQ-2000 indoor air quality development platform

version 1.0, 10/2009

AppliedSensor GmbH
Tel.: +49 7121 514860
Fax: +49 7121 5148629
Mail: info@appliedsensor.com
© AppliedSensor GmbH, 2009

Introduction

In order to supply a powerful tool for feasibility studies in the field of indoor air quality to potential users of metal oxide semiconductor gas sensor technology, AppliedSensor put together a test kit with a gas sensor module (iAQ-2000), an interface for readout and communication and a software package. This test kit enables a fast feasibility study to serve as input for a product specific development.

Hardware

The iAQ-2000 serves as a platform for feasibility studies and application developments and consists of 1 semi-conducting metal oxide (MOS) sensor for the detection of reducing gases on a PCB. The firmware, running on the internal micro-controller, drives and controls all performance determining routines and creates the output (resistance) with an interval time of ~1 second.

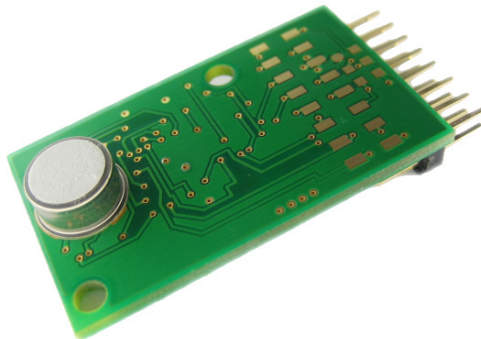


Fig.1: iAQ-2000 module.

Interface cable: Used to read out the iAQ-2000 with the software via USB port. Power is provided by USB port.

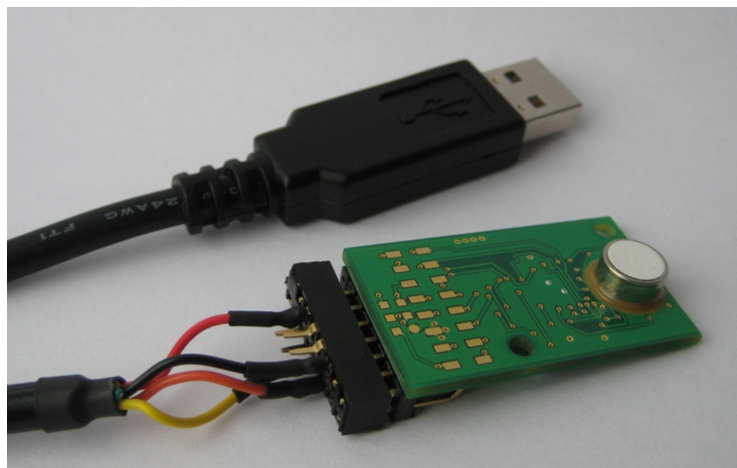


Fig.2: USB interface cable connected to the iAQ-2000 module.

Software

HW-PC interface

IAQ Log is used to collect measurement data via the USB port (-s) with a graphical representation of the data.

IAQ Log launch

Save the IAQ Log exe-file to a specific path and then **double-click the icon**.

Graph page

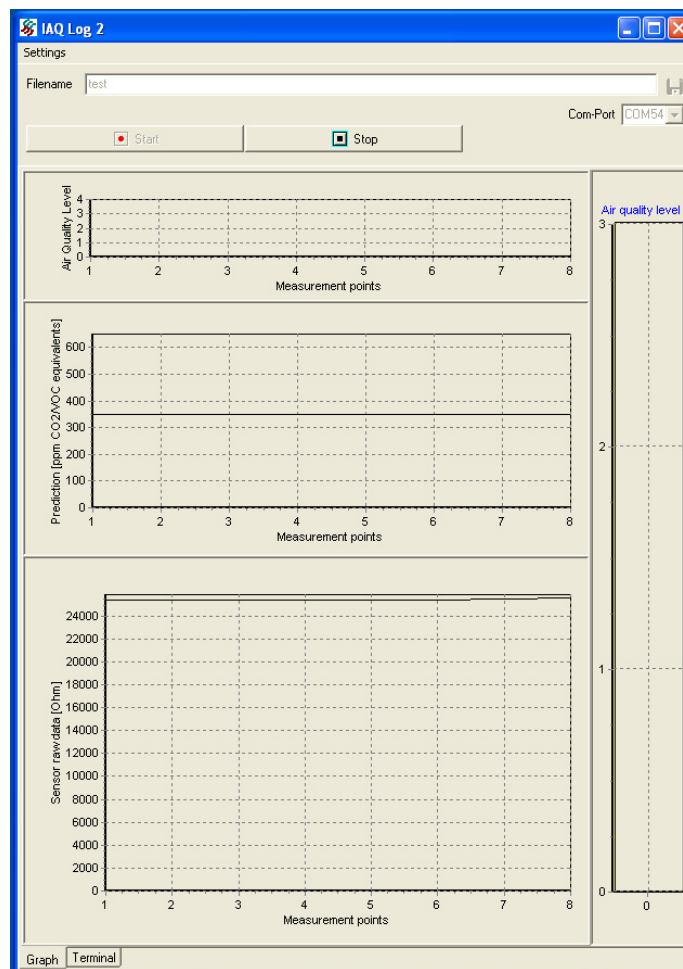


Fig.3: IAQ Log graphs.

Com-port selection: Choose desired Com-port.

Filename: Choose appropriate filename (avoid any special characters!). Then press **start**.

Graph Air Quality level: In this window, the calculated Air Quality Level based on the defined threshold limits is displayed. Additionally, a bar is indicating the actual AQL.

Graph Prediction: In this window, the calculated Prediction in ppm CO₂/VOC equivalents based on resistance changes is displayed.

Graph Sensor raw data: In this window, the sensor raw data in resistance is displayed.

Note!: After each power on and start of IAQ Log, the Prediction and Air Quality level output is constant for the first 15 min until a stable equilibrium of the sensor resistance is reached (as seen in fig. 4). Additionally, there is an initial burn-in period of 6 hours with constant output of the Prediction and Air Quality level that only happens upon the very first use of the device. Please be aware that the burn-in procedure once has to be successfully completed!

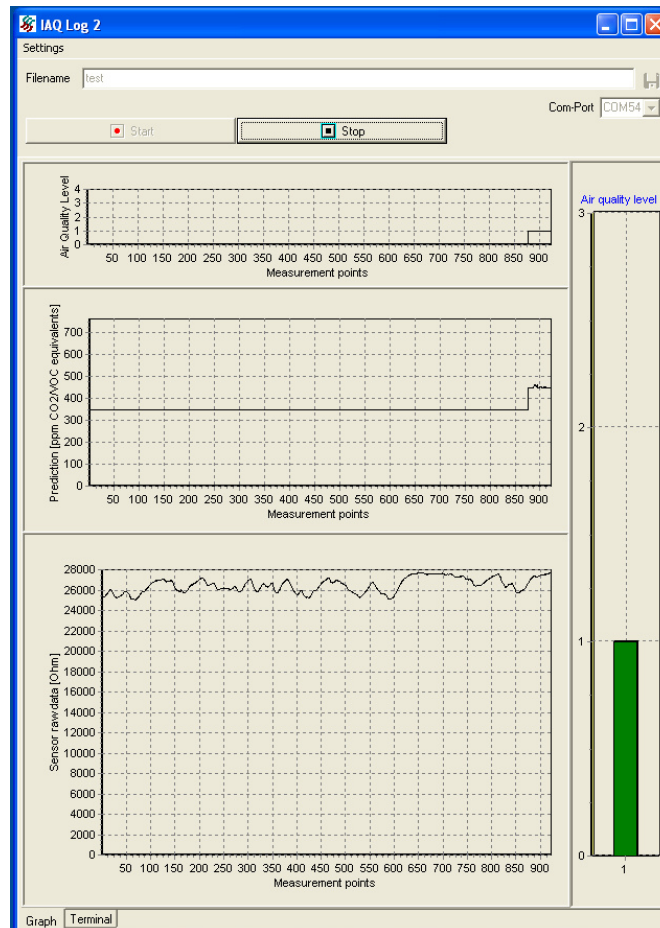


Fig.4: Example of a measurement with start of prediction and Air Quality Level output 15 min after power on (burn-in already completed once).

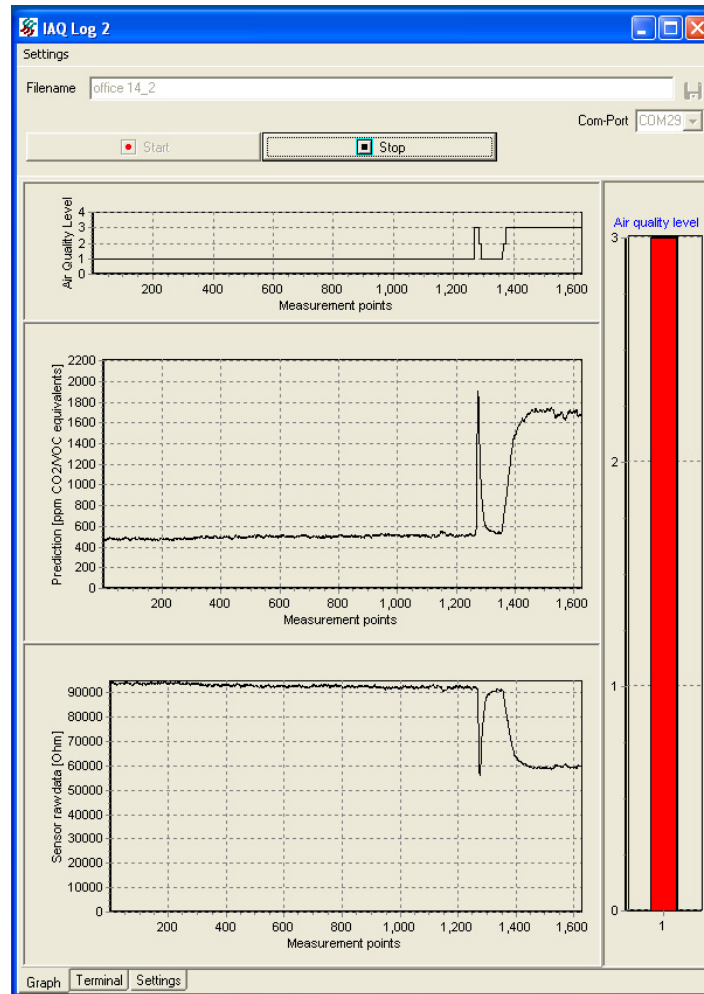


Fig.5: Example of a measurement with a short followed by a continuous VOC pulse.

Terminal page

On this page the incoming data is displayed (as seen in fig.6.).



Fig.6: Incoming data.

Text file

A saved text file can be opened e.g. using Microsoft Excel and has the following structure:

Header with general info
Column 1: date
column 2: time
column 3: prediction
column 4: sensor resistance
column 5: air quality level

IAQ	Log	2	Logfile	
Generated:	22.06.2009	09:57:44		
Time				
22.06.2009	09:57:44	463	27794	1
22.06.2009	09:57:45	471	27789	1
22.06.2009	09:57:46	473	27779	1
22.06.2009	09:57:47	480	27747	1
22.06.2009	09:57:48	474	27741	1
22.06.2009	09:57:49	469	27754	1

Settings page

On this page the settings can be updated. First press settings, login and then introduce password **"MOS"**.

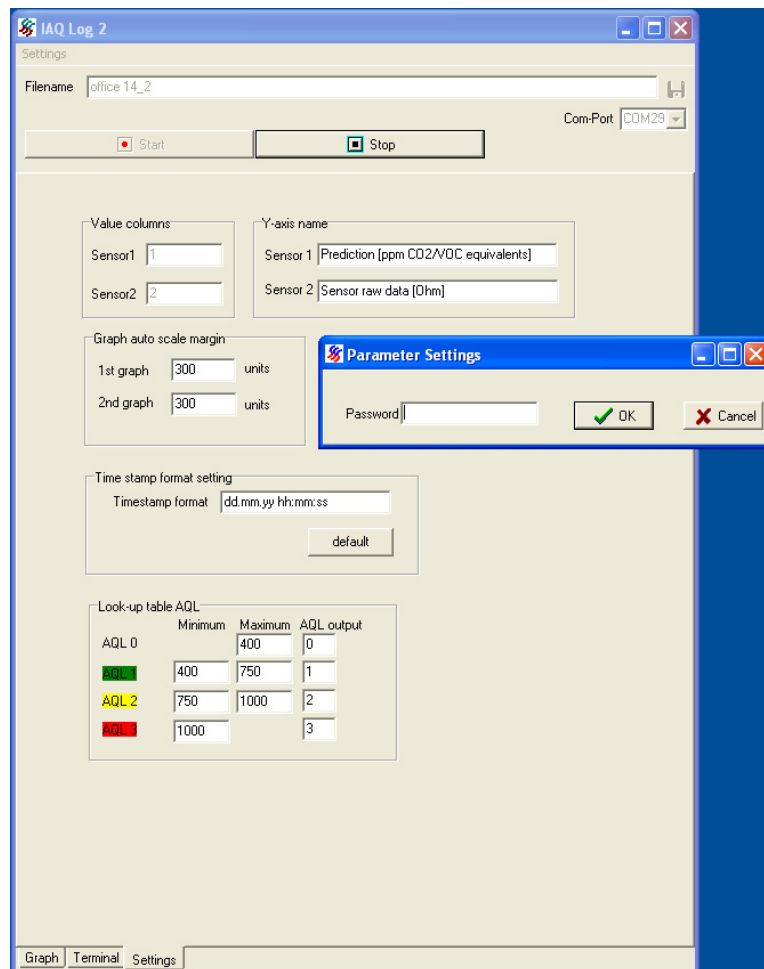


Fig.7: Login.

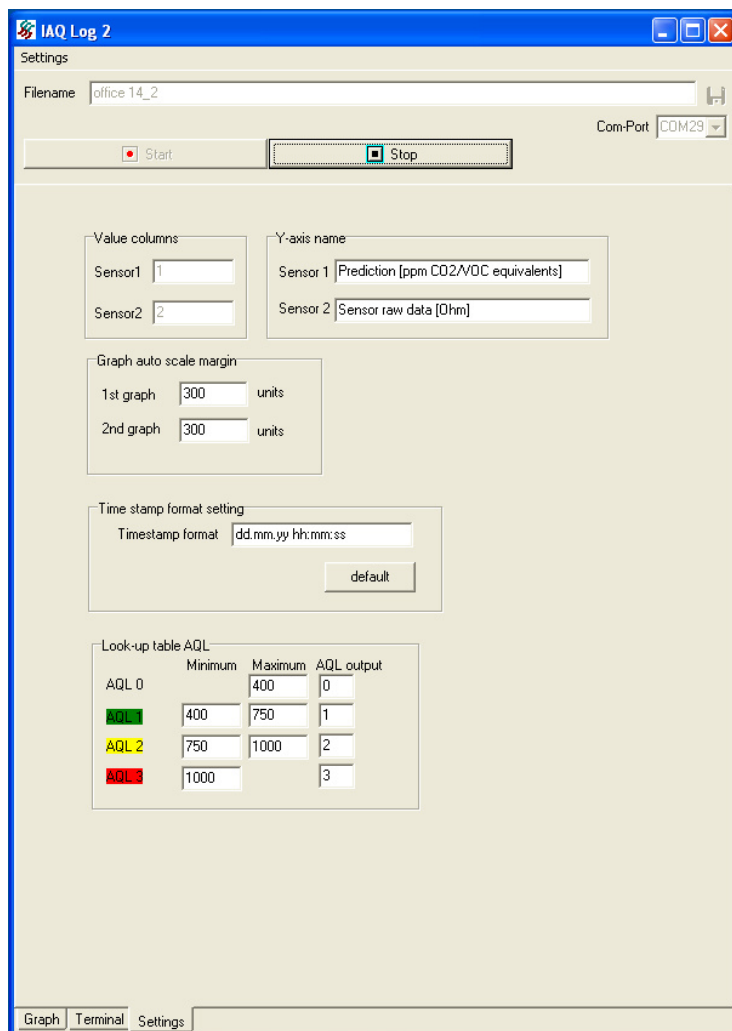


Fig.8: Settings page to update axis title, auto scale margin, time stamp format and Air Quality threshold limits.

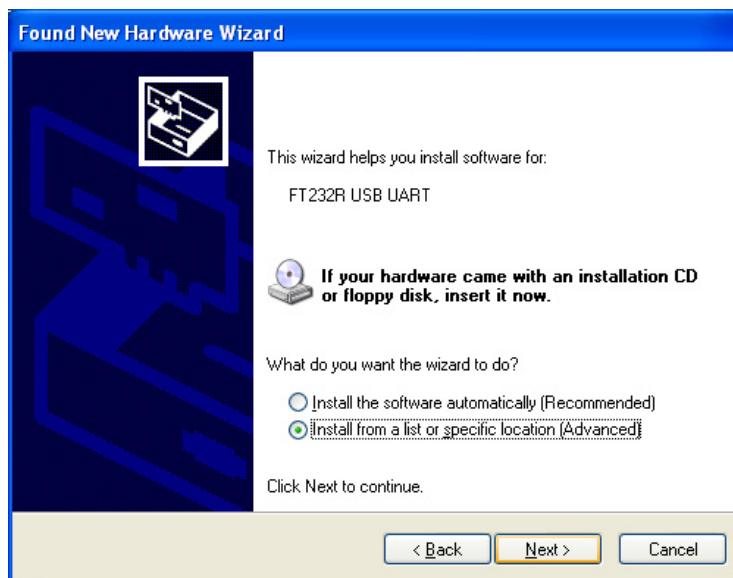
Connecting the device

- 1.) Connect the iAQ-2000 module using the USB cable with the PC
- 2.) **Install VCP driver** (Found New Hardware Wizard starts, when you connected the device)

- Select "No, not this time" from the options available and then click "Next" to proceed with the installation

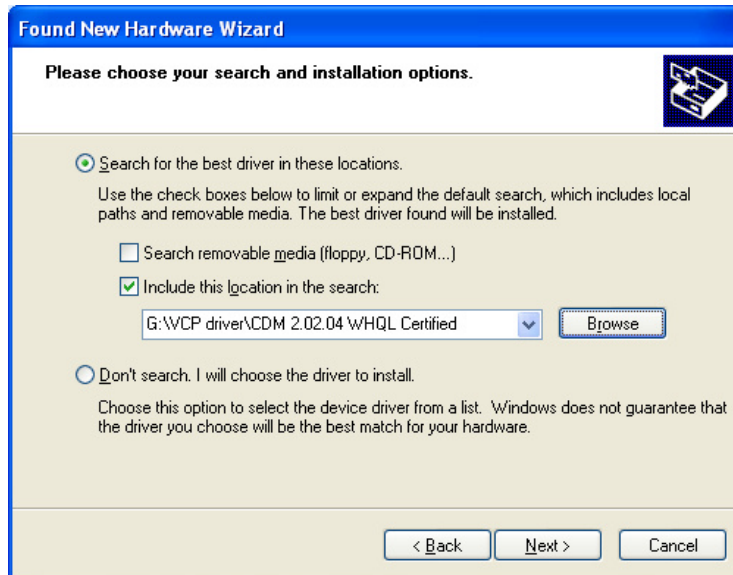


- Select "Install from a list or specific location (Advanced)" as shown below and then click "Next".

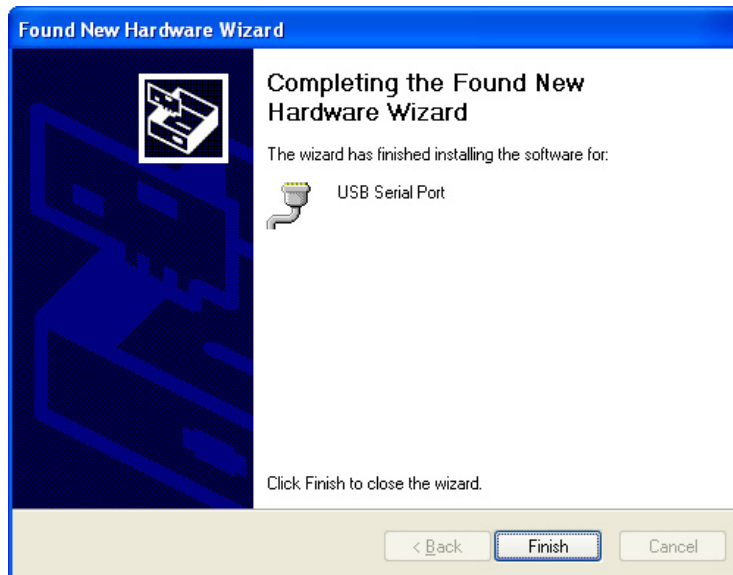


- Select "Search for the best driver in these locations" and enter the file path in the combo-box ("G:\VCP driver\CDM 2.02.04 WHQL Certified" in the

example below) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.



- Click "Finish" to complete the installation for the first port of the device.

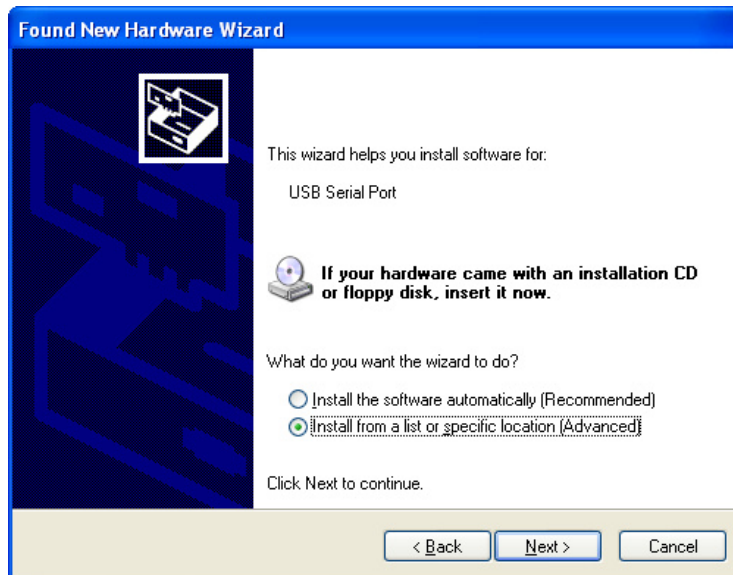


- If the device is based on the FT2232C, the Found New Hardware Wizard will continue by installing the USB Serial Converter driver for the second port of the FT2232C device. The procedure for installing the second port is identical to that for installing the first port from the first screen of the Found New Hardware Wizard.

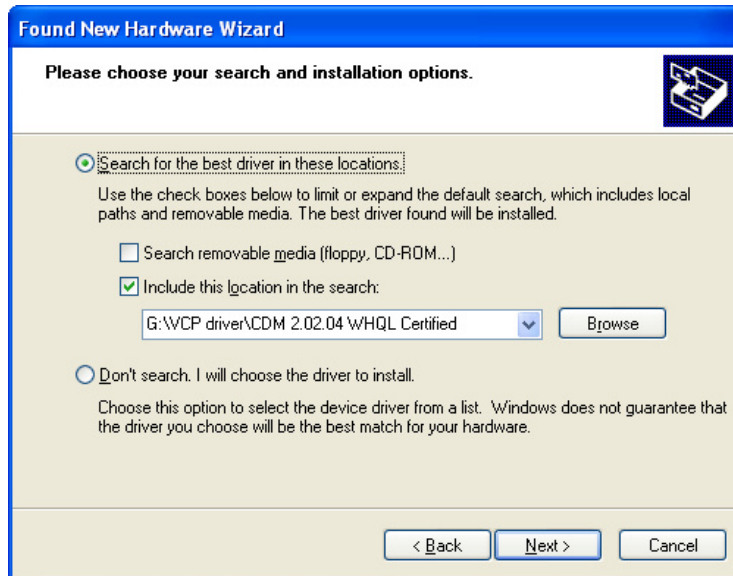
As above, select "No, not this time" From the options and click "Next" to proceed with the installation.



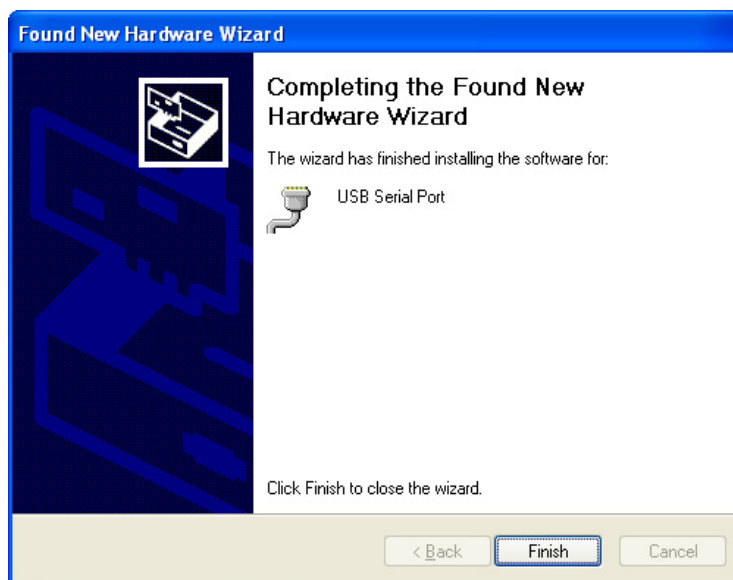
- Select "Install from a list or specific location (Advanced)" as shown below and then click "Next".



- Select "Search for the best driver in these locations" and enter the file path in the combo-box ("G:\VCP driver\CDM 2.02.04 WHQL Certified" in the example below) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.



- Click "Finish" to complete the installation for the first port of the device.



AppliedSensor is not responsible for the design, implementation, manufacture or results from use of products that incorporate AppliedSensor components unless expressly agreed to in writing. Prior to using or distributing any product that incorporates AppliedSensor components, users and distributors should assure adequate design, testing and operating safeguards, and consult with AppliedSensor's technical staff, as necessary.

All AppliedSensor components and services are sold subject to AppliedSensor's terms and conditions of sale. For the most current AppliedSensor product information and terms and conditions of sale visit us at www.appliedsensor.com. AppliedSensor and the AppliedSensor logo are trademarks of AppliedSensor Sweden AB, AppliedSensor GmbH and AppliedSensor, Inc.

Copyright © 2009 AppliedSensor Sweden AB.