

Manual

Software SPECTRO3-MONITORING V1.0

(PC software for Microsoft® Windows® XP, Me, 2000)

for color sensors of the SPECTRO-3 series

This manual describes the installation and operation of the SPECTRO3-MONITORING PC software version V1.0.

The software only works with the security key „SI-USB-Key“. For data monitoring, the “SI-USB-Key” must be connected to a free USB port. Without the “SI-USB-Key” only max. 25 data frames will be recorded. The installation guide of the “SI-USB-Key” is described in this manual.

The software was developed for configuring up to 8 color sensors of the SPECTRO-3 series in a multi-sensor system that can be used for the continuous inline measurement and control of surfaces at several measuring points at the same time. Measurement values are recorded and are also displayed at the PC monitor, and they can be printed out after the end of recording.

The software concept provides two user levels: A password-protected administrator function for configuring the inline measurement system and for setting all the parameters for operation, and an easy-to-use user function that only allows the setting of the start and end of recording with input of production parameters (that have been determined by the administrator). The print function also is available for the normal user.

As a support for commissioning and operation of the SPECTRO3-MONITORING software this manual explains the individual functional elements of the graphic Windows® user interface.

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Shortcuts:

SEND	F9
GET	F10
GO	F11
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1 Installation of the SPECTRO3-MONITORING software

Hardware requirements for successful installation of the SPECTRO3-MONITORING software:

- IBM PC AT or compatible PC
- VGA graphics
- Microsoft® Windows® XP, Me, 2000
- Serial RS232 interface at the PC
- Microsoft-compatible mouse
- Cable for the RS232 interface
- CD-ROM drive
- 20 MByte of free hard disk space

The SPECTRO3-MONITORING software can only be installed under Windows. Windows must therefore be started first, if it is not yet running.

Please install the software as described below:

1. The software can be installed directly from the installation CD-ROM. The CD-ROM contains a folder named INSTALL, where you can find a SETUP program. Start this SETUP program to install the software.
2. The installation program displays a dialog and suggests to install the software in the C:\"FILENAME" directory on the hard disk. You may accept this suggestion with **OK** or **[ENTER]**, or you may change the path as desired.
3. During the installation process a new program group for the software is created in the Windows Program Manager. In the this program group an icon for starting the software is created automatically. When installation is successfully completed the installation program displays a "Setup OK" message.
4. After successful installation the software can be started with a left mouse button double-click on the icon.

Windows® is a registered trademark of Microsoft Corp.

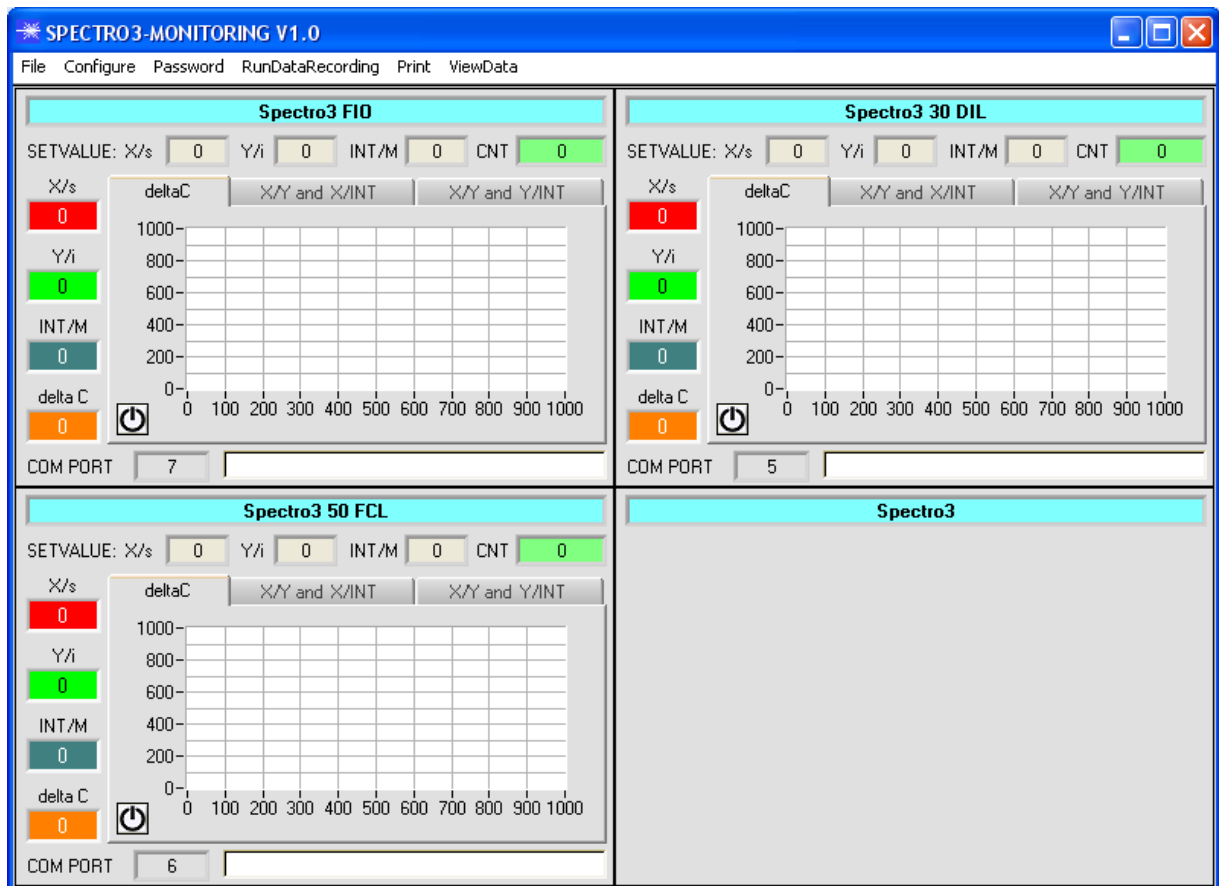
VGA™ is a trademark of International Business Machines Corp.

2 Operation of the SPECTRO3-MONITORING software

2.1 Software description

Please read this chapter before you start the process of initialising the software.

When the **SPECTRO3-MONITORING** software is started, the following window appears on the Windows user interface. Depending on the settings in the "**Startup Configurationfile**", various elements are displayed.



2.1.1 "File" menu

File Configure Tools Password RunDal

Load Configuration File
Save Configuration File
Save As Startup Configuration File

In the **"File"** menu, configuration files that are set under **"Configure"** can be saved to a file or loaded from a file.

The **"Save As Startup Configuration File"** item defines the currently set parameters as startup parameters, i.e. these parameters will be loaded automatically when the software is started.

2.1.2 "Configure" menu

Configure Tools Password RunDal

Set Sensor Configuration
Set Product Parameter
Set Output Path
Set Record Mode

The **"Configure"** menu can be used for performing certain parameter presets.

A click on **"Set Sensor Configuration"** opens the following window:

Sensor 1	Sensor 2
<input checked="" type="checkbox"/> ENABLE	<input checked="" type="checkbox"/> ENABLE
INSERT SENSOR NAME: Spectro3 30 POL	INSERT SENSOR NAME: Spectro3 50 FCL
delta C TOLERANCE: 180	delta C TOLERANCE: 136
SELECT CONNECTION: COM PORT 6 BAUD 19200	SELECT CONNECTION: COM PORT 5 BAUD 19200

Sensor 3	Sensor 4
<input checked="" type="checkbox"/> ENABLE	<input type="checkbox"/> ENABLE
INSERT SENSOR NAME: Spectro3 30 FIO	
delta C TOLERANCE: 100	
SELECT CONNECTION: COM PORT 7 BAUD 19200	

Sensor 5	Sensor 6
<input type="checkbox"/> ENABLE	<input type="checkbox"/> ENABLE

Sensor 7	Sensor 8
<input type="checkbox"/> ENABLE	<input type="checkbox"/> ENABLE

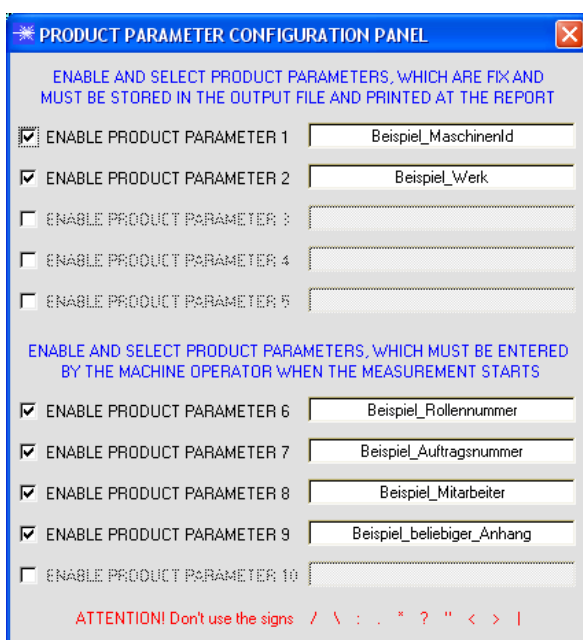
If data should be recorded from a sensor, the sensor must be activated with **"ENABLE"**.

In the **"INSERT SENSOR NAME"** field a name can be assigned to the sensor. This name will then be displayed in the main window, saved in the output file, and will also be printed.

In the **delta C TOLERANCE** field a threshold can be set for the **delta C** graph. If the current **delta C** value exceeds this threshold, or if **delta C=-1**, the background of the graph and of the **delta C** display will turn red.

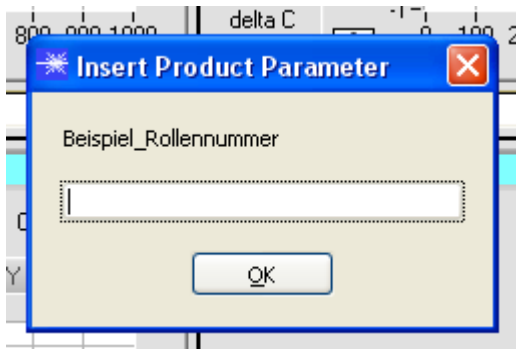
The interface between sensor and PC is determined under **"SELECT CONNECTION"**.

A click on **"Set Product Parameter"** opens the following window:



There are 5 parameters that can be individually entered. All these data are fixed and are, if they are enabled, saved in the file and printed in the report. Parameters 6 to 10, if they are enabled, must be entered by the operator after pressing **"Start"**. These data also are saved in the file and printed.

Attention!
The characters / \ : . * ? \" < > | must not be used.



Example:
"ENABLE PRODUCT PARAMETER 6" is activated and is assigned the input of **"Beispiel_Rollennummer"** (i.e. example roll number).
When **"RunDataRecording"** and **"Start"** is pressed, a window will appear prompting the operator to enter a roll number.

A click on "Set Output Path" opens the following window:

This window is used for defining the output file.

„**SAVE DATA TO FILE**“ determines whether the data should be stored to a file, or whether they should be visualized only. If „**SAVE DATA TO FILE**“ is not enabled, all setting possibilities will be faded out.

If "**OPERATOR CREATES FILENAME MANUALLY**" is activated, the software, after the operator presses "Start", prompts the operator to define an output file.

If "**CREATE FILENAME AUTOMATICALLY**" is activated, the software automatically creates the output file.

The output path is determined with "**Output Directory**". The file name comprises the activated "**PRODUCT PARAMETER**", the sensor name and the extension defined under "**SELECT A FILE EXTENSION**".

Under „**SELECT DATA WHICH SHOULD BE SAVED TO FILE**“ that data are selected, which should be stored.

INFO!

If the output file should be opened with Microsoft EXCEL, the regional settings in Windows should first be set to an Anglo-American country (Great Britain, USA, ...). The reason for this is that EXCEL interprets a number with comma as a date information. If the file is saved in Anglo-American mode and the regional settings are then set back to your respective country, EXCEL will recognise a number with comma correctly. If the file is saved in the Anglo-American mode, and if the regional

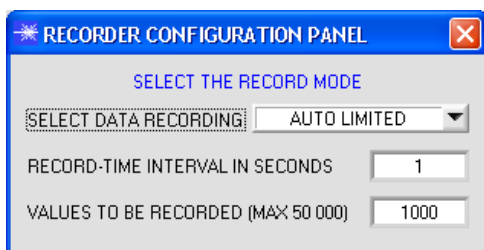
settings are then set back to the respective country, EXCEL recognises the gloss factor as a floating point number.

The following steps must be performed to change to an Anglo-American language:

Start → Settings → Control Panel → Regional and Language Settings

An Anglo-American language can then be selected in the "Regional Settings" tab.

A click on **"Select Record Mode"** opens the following window:



This window is used for determining the data recording mode.

With **"AUTO LIMITED"**, an adjustable number of data is recorded after an adjustable time interval.

With **"AUTO UNLIMITED"** data are recorded after an adjustable time interval until recording is stopped by pressing "Stop".

With **"AUTO TRIGGERED"** the sensor automatically sends data which are then recorded and saved.

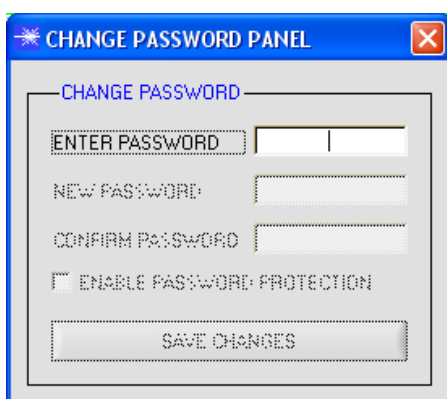
Attention!

For using the **"AUTO TRIGGERED"** function the sensor must operate in one of the trigger modes, because data only are sent when the trigger condition drops (cf. instruction manual SPECTRO3-Scope).

2.1.3 "Password" menu



The **"File"** and **"Configure"** items can be protected by a password. Password protection can be enabled and disabled. The default password is: 0000000000 (in words: 10 zeros). The password can be individually changed.

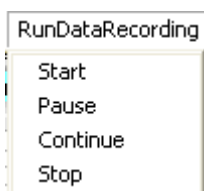


When password protection is enabled, the menu items **"File"** and **"Configuration"** only can be accessed after pressing **"Deactivate Password Protection"** and entering the correct password.

Attention!

Password protection must be activated again with **"Activate Password Protection"**.

2.1.4 "RunDataRecording" menu

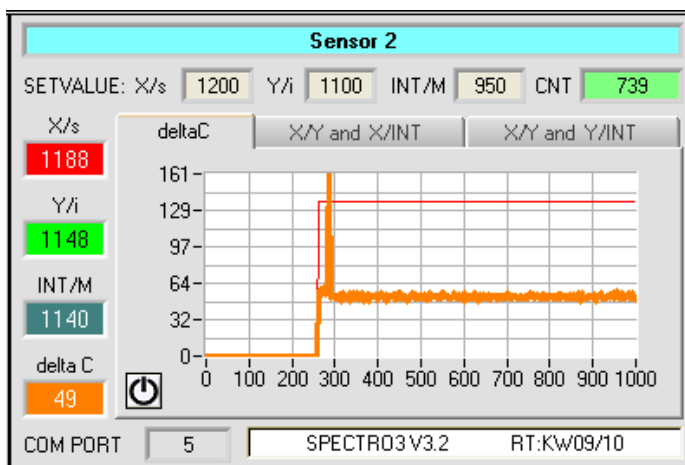


In this menu item data recording can be started with **"Start"** and stopped with **"Stop"**. Data recording furthermore can be paused with **"Pause"** and then continued again with **"Continue"**.

The data are immediately saved in the correspondingly created file and are visualised on the user interface.

When **"Start"** is pressed, the product parameters 6 to 10 that are enabled in **"Set Product Parameters"** must be entered.

If **"OPERATOR CREATES FILENAME MANUALLY"** is activated under **"Set Output Path"**, the operator will be prompted to specify a file.



Data immediately are saved in the corresponding created file, if it is activated, and visualised on the user interface. The total number of recorded values is displayed in the **CNT** field.

Above the graph the **X, Y, and INT (or s, i, M)** values of the color that was learned to row 1 are displayed in the **SETVALUE** fields.

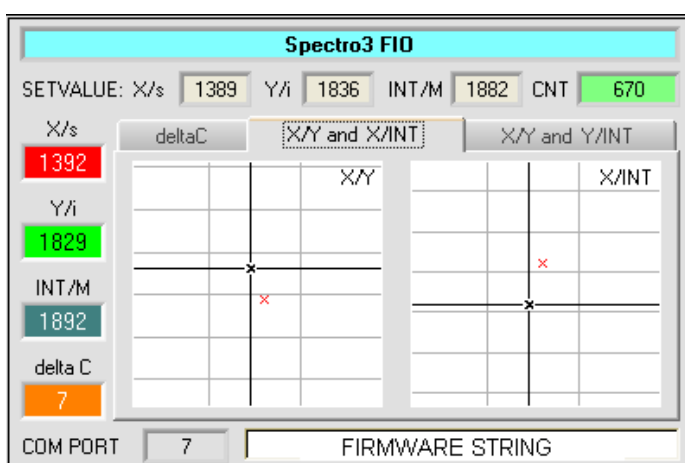
The current **X, Y, and INT (or s, i, M)** values and **deltaC** are displayed on the left of the graph.

The **deltaC** tab provides a view that visualises **deltaC** in a graph.

For reasons of memory space only the last 1000 values are shown in the graph.

The output file, however, contains all the values.

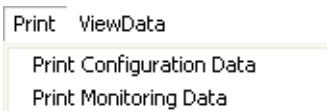
Pressing Reset sets this graph back to 0.



The **X/Y and X/INT** and the **X/Y and Y/INT** tabs provide a view of the current values of **X, Y, and INT (or s, i, M)** and of the **SETVALUES** of **X, Y, and INT (or s, i, M)** in two graphs.

The black crosshairs represent the setvalues, the current values are indicated by a red X.

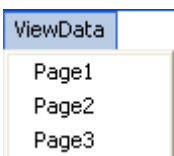
2.1.5 "Print" menu



A stored configuration file can be selected and printed by pressing **"Print Configuration Data"**.

"Print Monitoring Data" prints the activated product parameters and a screenshot of the current user interface.

2.1.6 "ViewData" menu

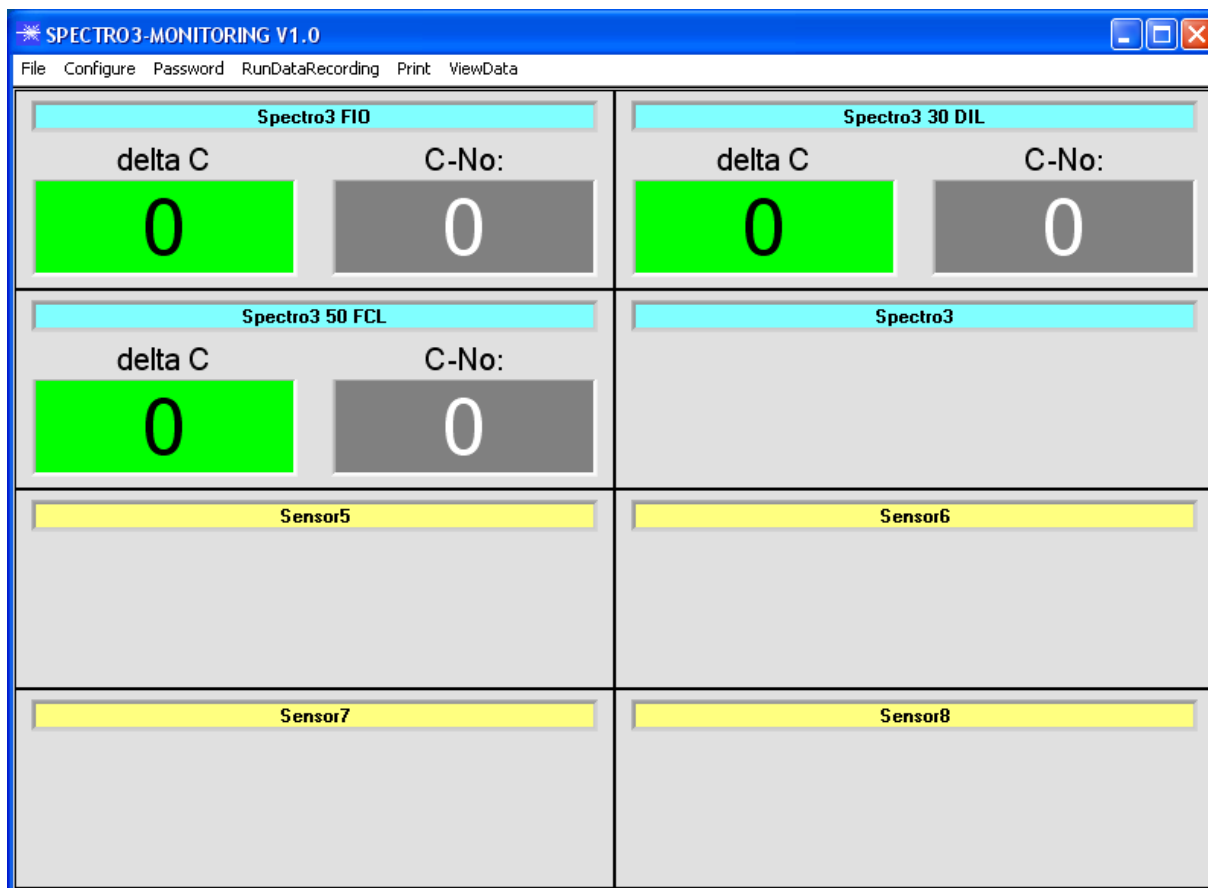


For reasons of space only 4 sensors can be displayed on a screen.

"Page1" and **"Page2"** can be used to toggle between the first 4 and the last 4 sensors.

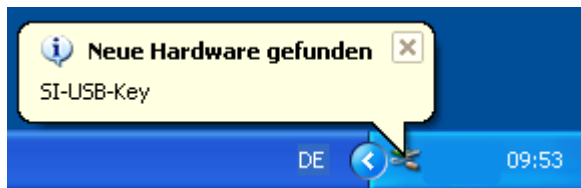
"Page3", however, displays the delta C and the C-No. of all 8 connected sensors.

Attention! The display only shows the sensors that are set to enabled.

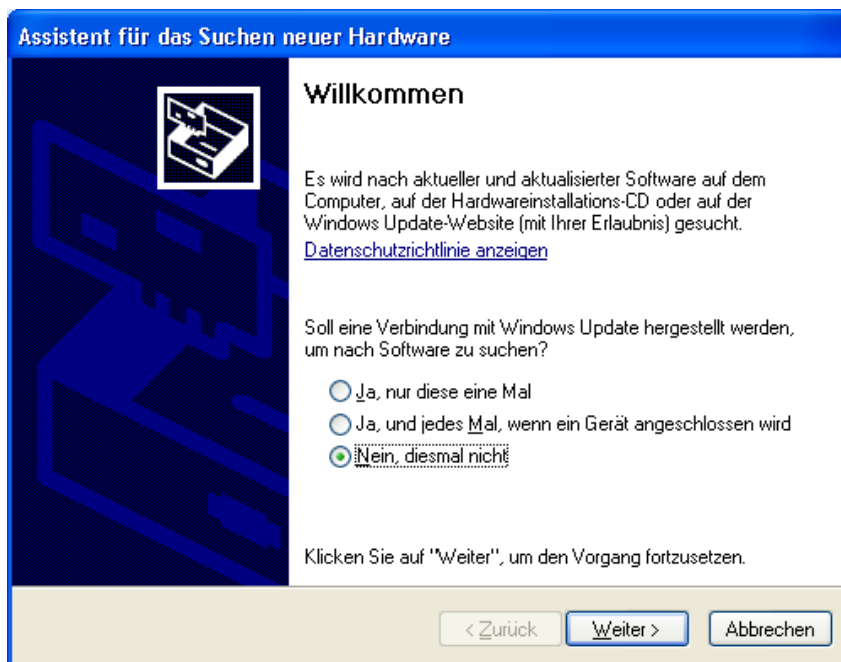


3 Installation of the „SI-USB-Key“

Connect the “SI-USB-Key” to your PC to a free USB port at the PC.



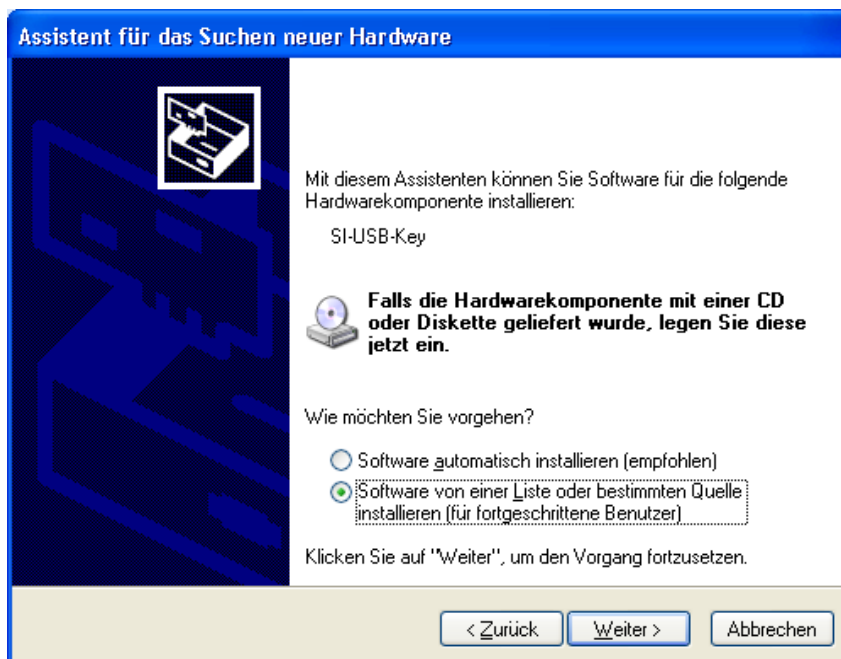
A "Found new hardware" (**Neue Hardware gefunden**) notice will pop up in your system tray.



Windows will then start the "Found new hardware wizard" (**Assistent für das Suchen neuer Hardware**).

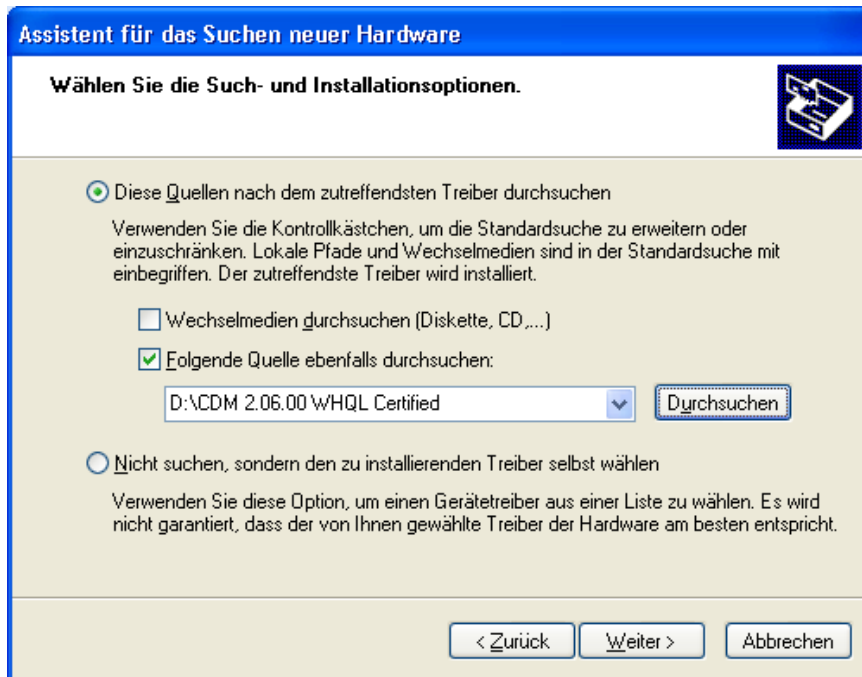
Ⓞ **Nein, diesmal nicht**

click on "Weiter>" (Next) to continue.



Ⓞ **Software von einer Liste oder bestimmten Quelle installieren (für fortgeschrittene Benutzer)**

click on "Weiter>" (Next) to continue.



In the next window the wizard will ask for the location of the driver.

In this example the driver was copied to "D:\". Click "Weiter>" (Next) to continue.

The driver will then be installed automatically.





The „SI-USB-Key“ has now been installed.
Close the wizard by clicking on **"Fertig stellen"** (Finish).



A notice informing about successful installation will pop up in the system tray.