

Driver Installation

for USB, PCI and PCIe
Data Acquisition Systems

Installation Guide

Version 4.6

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bavarian measurement company munich



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1 Overview

1.1 Introduction

BMC Messsysteme GmbH offers a driver concept for its data acquisition systems perfectly working together with the operating systems Windows® XP/7/8.

The installation of the device driver has to be done first. It allows for the connection between measuring and operating system. BMC Messsysteme GmbH provides a driver package with device drivers for bmcm hardware, which is copied onto hard disc. The succeeding driver installation varies depending on the hardware and operating system used.

Under Windows® XP/7/8, the installation of the device drivers is done via the integrated "Hardware Wizard". *Plug&Play* compatible data acquisition systems (USB, PCI, PCIe) are detected automatically. The system is searching for resources available for the data acquisition systems and assigns them to the hardware.

Afterwards, check for the successful installation in the Windows® XP/7/8 Device Manager.

The programming interface establishes the connection between the data acquisition system and the programming language so that particular applications in measurement and control technology can be realized by programming. In this category we offer, for example, the hardware independent programming interface *LIBADX* implemented as ActiveX Control. The installation is described in the relevant documentation.

All drivers are written in 32-bit and 64-bit code providing for fast performance. Depending on the operating system, the 32-bit or the 64-bit version will automatically be installed.

All software and the accompanying documentation are included on our "Software Collection", which comes with the delivery of your data acquisition system.

1.2 BMC Messsysteme GmbH



BMC Messsysteme GmbH stands for innovative measuring technology made in Germany. We provide all components required for the measuring chain, from sensor to software.

Our hardware and software components are perfectly tuned with each other to produce an extremely user-friendly integrated system. We put great emphasis on observing current industrial standards, which facilitate the interaction of many components.

Products by BMC Messsysteme are applied in industrial large-scale enterprises, in research and development and in private applications. We produce in compliance with ISO-9000-standards because standards and reliability are of paramount importance to us - for your profit and success.

Please visit us on the web (<http://www.bmcm.de/>) for detailed information and latest news.

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1.3 Copyrights

The driver package has been developed and tested with utmost care. BMC Messsysteme GmbH does not provide any guarantee in respect of this manual, the hardware and software described in it, its quality, its performance or fitness for a particular purpose. BMC Messsysteme GmbH is not liable in any case for direct or indirect damages or consequential damages, which may arise from improper operation or any faults whatsoever of the system. The system is subject to changes and alterations which serve the purpose of technical improvement.

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1.4 bmcm hardware

The driver version 4.4 of the bmcm "Software Collection" CD supports the following hardware:

Product	Interface	Notes
<i>meM-AD</i>	USB	Plug&Play installation
<i>meM-ADDA</i>	USB	Plug&Play installation
<i>meM-ADf</i>	USB	Plug&Play installation
<i>meM-ADfo</i>	USB	Plug&Play installation
<i>meM-INC</i>	USB	Plug&Play installation
<i>meM-LOG(-SE)</i>	USB, RS232	Plug&Play installation only necessary if using via USB, turn on data logger before
<i>meM-PIO(-OEM)</i>	USB	Plug&Play installation
<i>PCI-BASE300</i>	PCI	slot card must be mounted in the off-state PC first before starting the Plug&Play installation
<i>PCI-BASE1000</i>	PCI	slot card must be mounted in the off-state PC first before starting the Plug&Play installation
<i>PCI-BASEII</i>	PCI	slot card must be mounted in the off-state PC first before starting the Plug&Play installation
<i>PCI-PIO</i>	PCI	slot card must be mounted in the off-state PC first before starting the Plug&Play installation
<i>PCIe-BASE</i>	PCIe	slot card must be mounted in the off-state PC first before starting the Plug&Play installation
<i>USB-AD</i>	USB	Plug&Play installation
<i>USB-AD12f</i>	USB	Plug&Play installation
<i>USB-AD14f</i>	USB	Plug&Play installation
<i>USB-AD16f</i>	USB	Plug&Play installation
<i>USB-OI16</i>	USB	Plug&Play installation
<i>USB-PIO</i>	USB	Plug&Play installation
<i>USB-PIO-OEM</i>	USB	Plug&Play installation

1.5 Quickstart

1.5.1 Install bmcm driver package

The installation of the driver package is done by means of the "Software Collection" CD. When inserting the CD into the CD-ROM drive, a CD starter automatically opens (otherwise start **openhtml.exe**). First, select the link "Products" and then your DAQ system, which is listed under the respecting interface.

- On the product page, start the installation program after selecting the entry "BMCM-DR" in the section "Drivers".
- The installation can be opened directly. If your browser does not allow that, please save the file **install-drivers.exe** to hard disk first and then start the installation by opening it.
- You will only be asked for the program group and the directory path before the available storage capacity is calculated and the files are copied to disk.

1.5.2 Install hardware



- **Before installation of the bmcm hardware (see page 7), please always install the driver package (see page 8) first!**
 - **If using a PCI(e) card, turn off your PC and mount the slot card into your computer. The USB devices of the meM/USB series are connectable even during operation.**
 - **To install meM-LOG(-SE), which is only necessary if connecting via USB, turn on the data logger!**
 - **The hardware installation of PCI(e) cards and USB devices described on the following pages is only required at first-time connection of bmcm hardware. Additional devices (of different type also) are installed automatically.**
-

- When starting the computer, the new connected hardware is detected (meM-LOG(-SE) must be on!).
- Start the automatic hardware detection under Windows® XP by selecting the option "Install the software automatically" (XP SP2: do not connect to Windows Update!). Under Windows® 7/8, the driver will automatically be installed upon connection.
- Restart your computer if requested and check for the correct installation.

1.5.3 Verify correct installation

- Open the "Device Manager" integrated in Windows®:
 - **Windows® 8:** Right-click screen corner bottom left (keyboard "Windows+X") / Device Manager
 - **Windows® 7:** Start / Control Panel / System and Security / System / Device Manager
 - **Windows® XP:** Start / Control Panel / System / TAB "Hardware" / button "Device Manager"
- If the installation was successful (DAQ system connected and operational!), the newly installed hardware has been added to the entry "Data Acquisition (BMC Messsysteme GmbH)".
- A double-click on the device shows its properties and any existing conflicts. For driver updates choose TAB "Driver".

2 Installation

2.1 Notes

To operate the bmcm hardware, you have to install the driver for the respective data acquisition system. The installation process varies depending on the used hardware and operating system.

The driver installation is done in two steps: First, a driver package containing the drivers for all the bmcm devices is installed to the hard disc of the PC. The installation program for the bmcm driver package is on the "Software Collection" CD .

Afterwards, the hardware installation is done via the hardware wizard integrated in Windows[®]. At first-time connection of USB- or PCI(e) hardware (see "bmcm hardware", p. 4), the wizard is started automatically.



- **The driver installation must be done before installation of the software (programming interface and operating programs) so that the software can communicate with the hardware!**
 - **Always check for the hardware configuration in the "Device Manager" after installing the driver.**
 - **The device driver for meM-LOG(-SE) only has to be installed if operating the device via USB.**
-

The installation proceeds in clear steps. With the button "Back" you go one step back, with "Next" you continue with the installation. By clicking on "Cancel", the installation is stopped early and can be done later.

2.2 Installation of the bmcm driver package



The installation the driver package must be done before the installation of a bmcm DAQ system so that the drivers can be found!

The installation of the driver package is done by means of an installation program, which is on the "Software Collection" CD. As soon as you insert the CD into your CD-ROM drive, a CD starter automatically opens (otherwise start `openhtml.exe`).

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▶ **USB (USB-AD/AD14F/AD16F/PIO/O116)**
Data sheets, drivers, ActiveX Controls and software for the USB data acquisition systems USB-AD/AD14F/AD16F and the digital USB-PIO and USB-O116 devices.

▶ **NEXTVIEW®**
Please select this file for documentation like in

▶ **PRODUCTS**
Data sheets, drivers, interfaces for all prod

▶ **DRIVERS**
Installation of the hardware drivers on Windows® XP/7/8.
Please install the suitable driver first and then the required programming or application software.

Drivers for Windows® 7/XP

Product	Description	Version	Size	
IG-BMCM-DR	Installation guide for the bmcm driver package	4.6	558.5kB	📄
BMCM-DR	Driver package for bmcm data acquisition hardware	4.6	848.8kB	📄

▶ **PCI-PIO**
Data sheets, drivers, ActiveX Controls and software for the PCI-PIO data acquisition cards PCI-BASEII, PCI-PIO, modules MDDA16-4I/-8I.

▶ **USB-AD** ▶ **USB-AD14f** ▶ **USB-AD16f** ▶ **AMS42-USB** ▶ **AMS84-USB**

Fig. 1

Click the entry "Products" to see the bmcm measuring hardware classified by the used interface and select the device to be installed. On the respective product page, open the installation program by selecting the entry "BMCM-DR" in the section "Drivers".

If using the CD starter in HTML format, you can choose to directly open the installation program or to save it to disk. Both options are possible.

Some browsers require saving the installation program to hard disk before. In this case, you must explicitly start the installation program **install-drivers.exe** after copying.

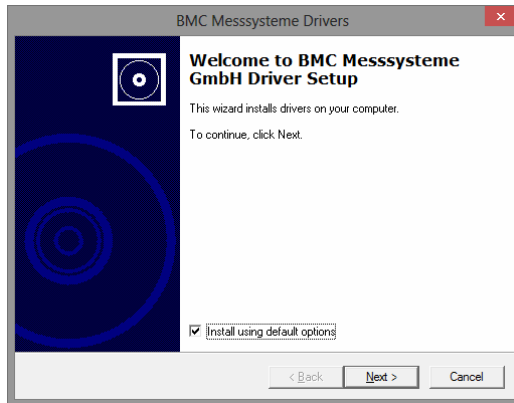


Fig. 2

An installation wizard will guide you through the installation step by step. The button "Next" will lead you to the next dialog box, with "Back" you go one step backwards. The installation can always be stopped early without saving anything by pressing "Cancel".

If you do not want to use default settings, you can uncheck this option in the first window of the installation program and decide where to install the driver package.

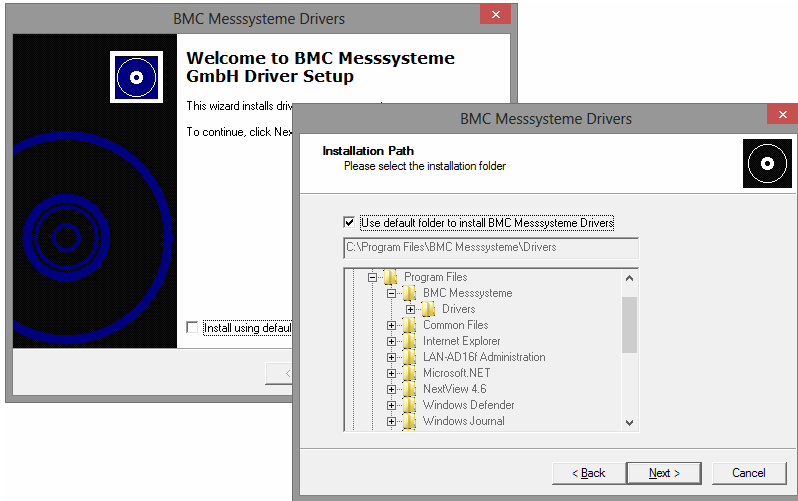


Fig. 3

Of course, the suggested program group "BMC Messsysteme", from where you can reach the software in the Windows[®] start menu, as well as the default directory path can be modified as desired.

To switch to another installation directory, uncheck the checkbox for to activate the boxes below.



We recommend to directly install onto hard disk and not to any other storage media, as otherwise the driver will not be found by the Windows[®] driver search during hardware installation!

After all information is given, the size of the available disk space is determined and the files required to install the bmcm driver package are copied to disk. Restart your computer if necessary for these changes to take effect.

Installation - Installation of the bmcm driver package

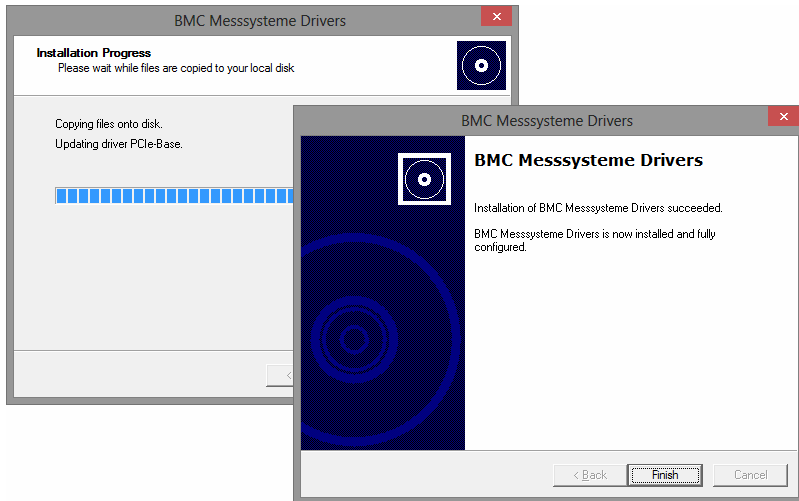


Fig. 4

2.3 Installation of the hardware



Before installation of the bmc hardware (see page 7), please always install the driver package (see page 11) to hard disc first.

2.3.1 Windows® 8

2.3.1.1 Plug&Play installation

Under Windows® 8, the installation of the bmc hardware (see page 7) automatically starts via the integrated hardware wizard if connecting *Plug&Play* compatible DAQ systems (USB, PCI and PCIe).



- **If using a PCI(e) card, turn off your PC and mount the measuring slot card into your computer. The USB devices of the USB/meM series are connectable even during operation.**
 - **To install meM-LOG(-SE), turn on the data logger!**
 - **The device driver for meM-LOG(-SE) only has to be installed if using the USB interface, for serial connection (RS232) it is not necessary.**
-
-

Under Windows® 8, the user has not much to do. The system detects the *Plug&Play* compatible measurement devices. The corresponding driver, which has been copied to the hard disc before, is found and installed automatically.

If the driver package has not been installed to hard disk but to another location, insert the directory path where the driver is located.

Finally restart your computer if requested and check for the successful installation in the Device Manager (see "Verify installation", p. 19).

2.3.1.2 Verify installation

To make sure there are no existing device conflicts or any other problems, the correct installation should always be checked afterwards. This information is provided in the Windows® 7 "Device Manager".

You can reach the Device Manager directly via a context menu, which opens by right-clicking the bottom left corner of the desktop or Start screen (keyboard "Windows+X").



Alternatively, the Device Manager can be opened in the "Control Panel" (*Start / Control Panel / System and Security*).

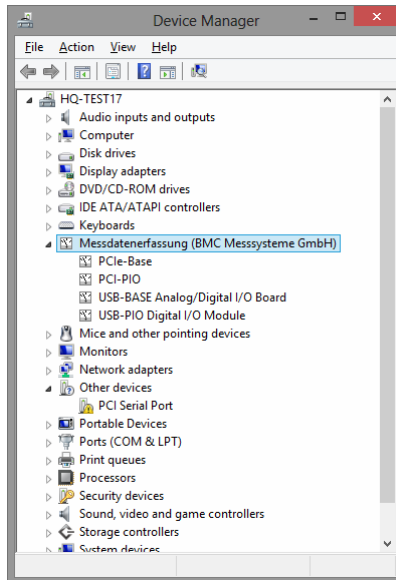


Fig. 5

An overview of the current configuration with all installed hardware components is shown.

Now, there is an additional entry "Data Acquisition (BMC Messsysteme GmbH)" in the list (click plus sign on the left) including the installed, connected and operational (turn on meM-LOG(-SE)!) bmcM devices.

A double-click on a DAQ system (or right-click + "Properties") opens the corresponding "Properties" dialog providing general information about the device and possible device conflicts (TAB "General"). To look up the driver version or other driver details, to update, deactivate or remove the hardware driver or to roll back to the previously installed driver, click TAB "Driver".

2.3.2 Windows® 7

2.3.2.1 Plug&Play installation

Under Windows® 7, the installation of the **bmcM hardware** (see page 7) automatically starts via the integrated hardware wizard if connecting *Plug&Play* compatible DAQ systems (USB, PCI and PCIe).



- **If using a PCI(e) card, turn off your PC and mount the measuring slot card into your computer. The USB devices of the USB/meM series are connectable even during operation.**
 - **To install meM-LOG(-SE), turn on the data logger!**
 - **The device driver for meM-LOG(-SE) only has to be installed if using the USB interface, for serial connection (RS232) it is not necessary.**
-
-

Under Windows® 7, the user has not much to do. The system detects the *Plug&Play* compatible measurement devices. The corresponding driver, which has been copied to the hard disc before, is found and installed automatically.

If the driver package has not been installed to hard disk but to another location, insert the directory path where the driver is located.

Finally restart your computer if requested and check for the successful installation in the Device Manager (see "Verify installation", p. 19).

2.3.2.2 Verify installation

To make sure there are no existing device conflicts or any other problems, the correct installation should always be checked afterwards. This information is provided in the Windows® 7 "Device Manager".



To reach the "Device Manager", double-click the displayed icon in the "Control Panel" (*Start / Control Panel / System and Security*). Select the "Device Manager" listed among the items on the left side.

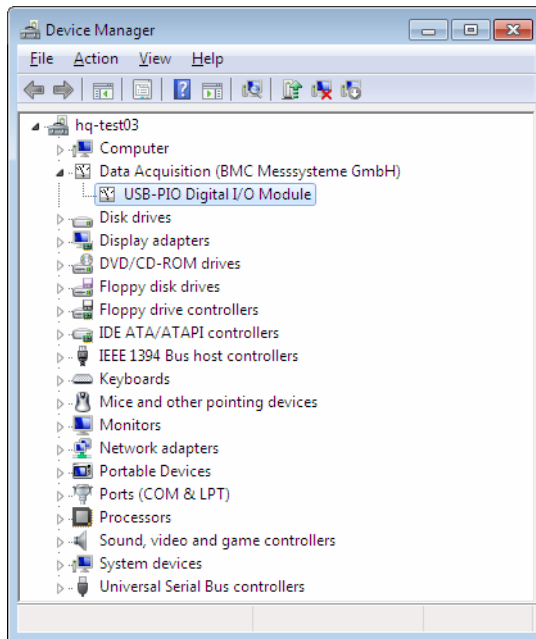


Fig. 6

An overview of the current configuration with all installed hardware components is shown.

Now, there is an additional entry "Data Acquisition (BMC Messsysteme GmbH)" in the list (click plus sign on the left) including the installed, connected and operational (turn on meM-LOG(-SE)!) bmc devices.

A double-click on a DAQ system (or right-click + "Properties") opens the corresponding "Properties" dialog providing general information about the device and possible device conflicts (TAB "General"). To look up the driver version or other driver details, to update, deactivate or remove the hardware driver or to roll back to the previously installed driver, click TAB "Driver".

2.3.3 Windows® XP

2.3.3.1 Plug&Play installation

Under Windows® XP, the installation of the **bmcm hardware** (see page 7) automatically starts via the integrated hardware wizard if connecting *Plug&Play* compatible DAQ systems (USB, PCI and PCIe).



- **If using a PCI(e) card, turn off your PC and mount the measuring slot card into your computer. The USB devices of the USB/meM series are connectable even during operation.**
 - **To install meM-LOG(-SE), turn on the data logger!**
 - **The device driver for meM-LOG(-SE) only has to be installed if using the USB interface, for serial connection (RS232) it is not necessary.**
 - **The hardware installation of PCI(e) cards and USB devices described on the following pages is required at first-time connection of bmcm hardware only. Additional devices (even of another type) are installed automatically.**
-

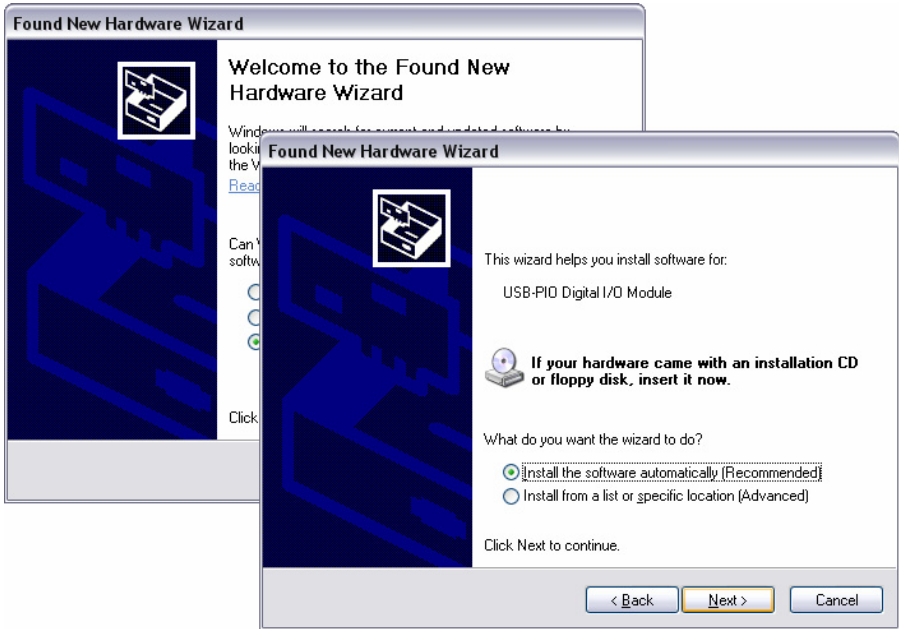


Fig. 7

After the first connection or mounting of the hardware, the system detects the *Plug&Play* compatible measurement devices. The system announces the hardware and opens the "Found New Hardware Wizard" integrated in Windows® XP to install the driver for the DAQ system.

If using Windows® XP, Service Pack 2 or higher, negate the option to connect to the Windows® Update Website for the installation of new software.

To start the automatic hardware detection, select the recommended option "Install the software automatically".

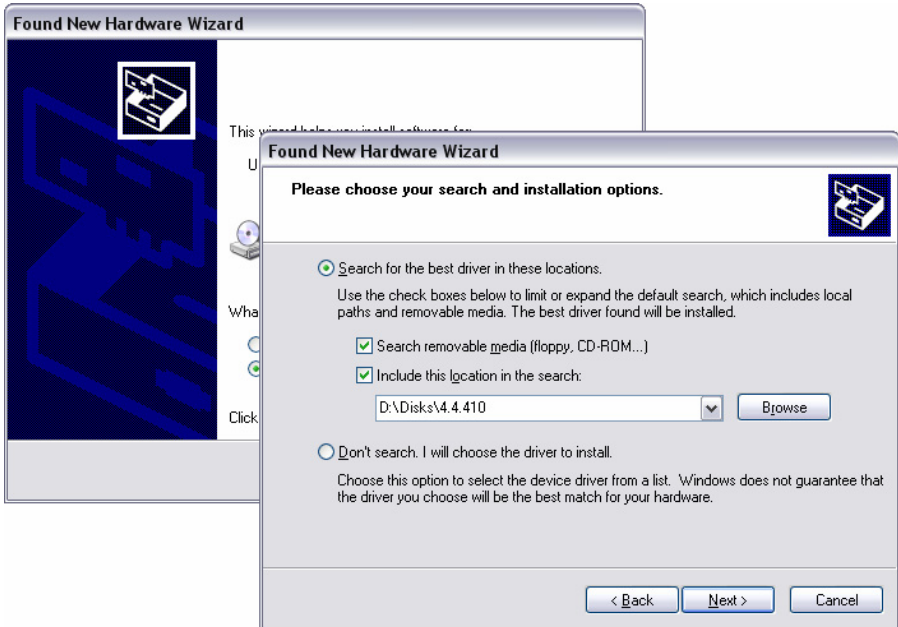


Fig. 8

If the driver package has not been installed to hard disk but to another location, "install from a list or specific location" and insert the directory path where the driver is located.

After the successful search, the "Found New Hardware Wizard" displays name and directory path of the suitable driver and starts the installation. The required files are copied to hard disk.

Finally, restart your computer if requested and check for the successful installation in the Device Manager (see "Verify installation", p. 24).

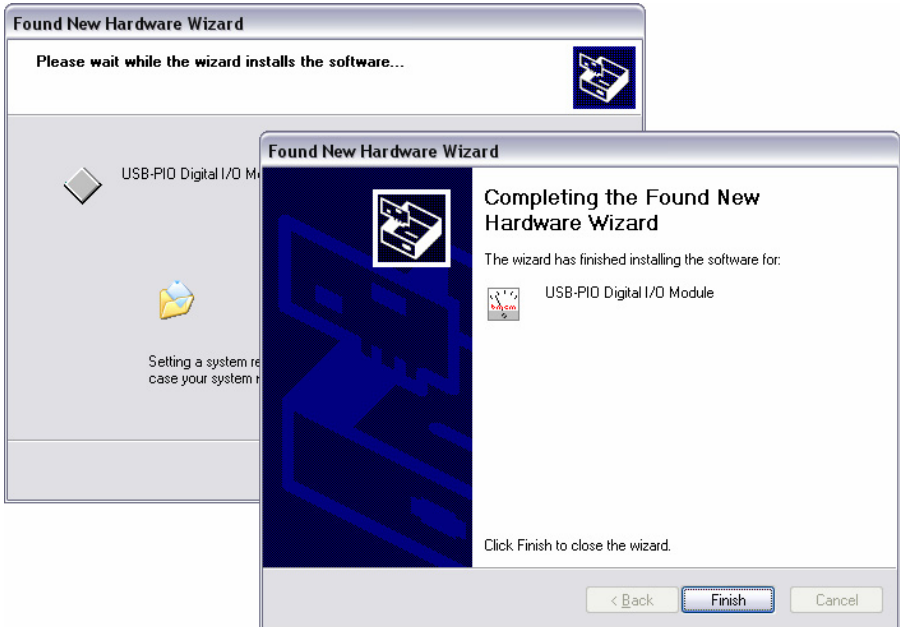


Fig. 9

2.3.3.2 Verify installation

To make sure there are no existing device conflicts or any other problems, the correct installation should always be checked afterwards. This information is provided in the Windows® XP "Device Manager".



System

To reach the "Device Manager", double-click the displayed icon in the "Control Panel" (*Start / Control Panel / System*). Switch to the TAB "Hardware" and press the button "Device Manager".

An overview of the current configuration with all installed hardware components is shown.

Now, there is an additional entry "Data Acquisition (BMC Messsysteme GmbH)" in the list (click plus sign on the left) including all installed, connected and operational (turn on meM-LOG(-SE)!) bmc devices.

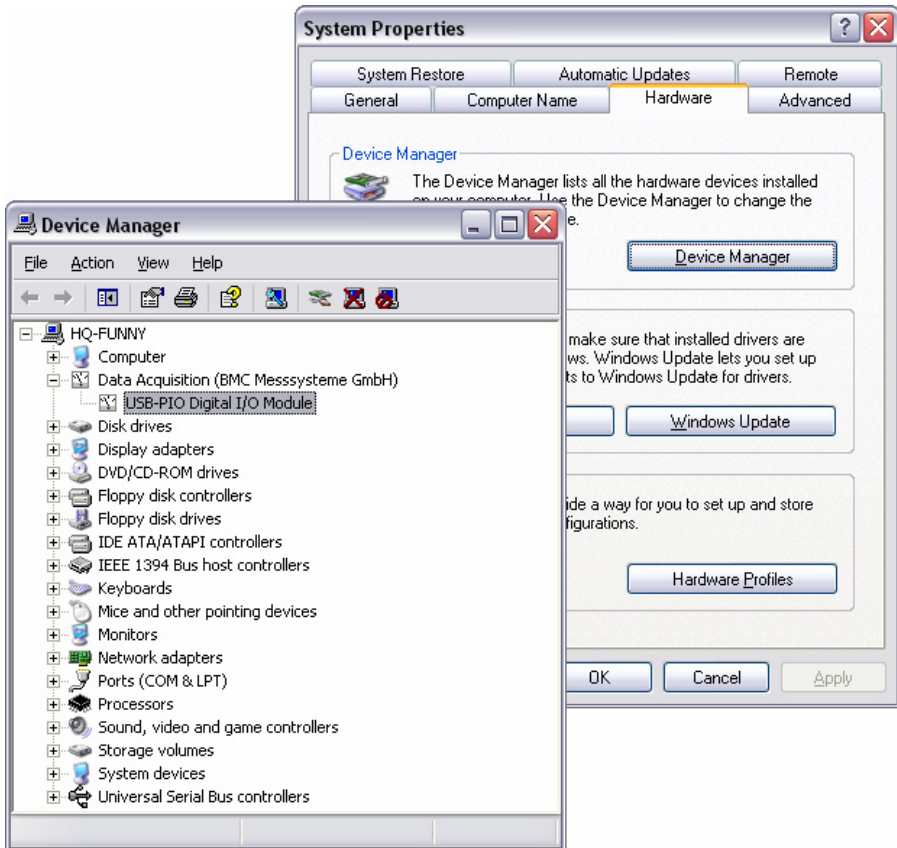


Fig. 10

A double-click on a DAQ system (or right-click + "Properties") opens the corresponding "Properties" dialog providing general information about the device and possible device conflicts (TAB "General"). To look up the driver version or other driver details, to update, deactivate or remove the hardware driver or to roll back to the previously installed driver, click TAB "Driver".

2.4 Update driver

The installation of the bmc driver package to the hard disk of the PC makes updating drivers much easier. Just install the new version of the bmc driver package, as described in chapter 2.2 (p. 11). The device driver is automatically updated in the system. No further steps are necessary.

To find out if the installation was successful, check the driver version in the "Device Manager". Open the "Properties" dialog (TAB "Driver") of the selected device and go to TAB "Driver".

- **Windows® 8:** Right-click screen corner bottom left (keyboard Windows+X) / Device Manager
- **Windows® 7:** Start / Control Panel / System and Security / System / Device Manager
- **Windows® XP:** Start / Control Panel / System / TAB "Hardware" / button "Device Manager"

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