

# ICP DAS

Driver



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## Introduction

### Support for ICP DAS Digital I/O devices



NeuroCheck supports various I/O devices for process communication, e.g. for exchanging status signals with a PLC. With this Digital I/O device driver based on the ICP DAS Uni DAQ SDK. 32- and 64-bit Windows operating system are supported.

## Supported Hardware

NeuroCheck supports some of the ICP DAS Digital I/O boards with this driver. The table below lists the currently supported Digital I/O devices. Please do not hesitate to contact your NeuroCheck partner for details or new developments on the ICP DAS digital I/O series.

ICP DAS PCI series			
Designation	Inputs	Outputs	Interfaces
PCI-P16R16	16, opto-isolated	16, Relay	PCI
PCI-P16POR16	16, opto-isolated	16, PhotoMos Relay	PCI

ICP DAS PEX series			
Designation	Inputs	Outputs	Interfaces
PEX-P16R16i	16, opto-isolated	16, Relay	PCI Express
PEX-P16POR16i	16, opto-isolated	16, PhotoMos Relay	PCI Express

**Important Note:**

A machine vision system consists of a variety of hardware and software components which must be well coordinated (PC system, BIOS, operating system and version, hardware drivers, camera, PCI boards, etc.). In general, [NeuroCheck GmbH](#) as producer of only one of these components cannot take responsibility for the complete system, i.e. we cannot guarantee that each possible combination of the above mentioned devices and components works properly. However, your NeuroCheck partner will be glad to help you selecting the right components for your machine vision application.

## System Requirements

The minimum system requirements are:

Element	Description
Operating system	Microsoft® Windows® 7 (32 bit and 64 bit) Microsoft® Windows® 8.1 (32 bit and 64 bit) Microsoft® Windows® 10 (32 bit and 64 bit)

## Installation of a ICP DAS Digital I/O device

Please carefully read the [system requirements](#).

### Driver

- Current Uni DAQ Driver Version: V1.3.9.0 from October 2017.
- Run the file "unidaq\_win\_setup.exe" from DVD or after unpacking the web edition.
- Follow the dialogs of the installation program. Please keep the default path C:\UniDAQ. Installation under Program Files will not work.
- Finish the installation wizard.
- Reboot your PC (or just turn it off to install the hardware).

### Hardware

- Turn off your computer and unplug the power cable from your computer.
- Attention: Some of the more sensitive components can be damaged by static electricity!  
Therefore: Make sure to ground yourself by touching an exposed metal part of the PC case before handling the board.
- Plug in the ICP DAS Digital I/O card on a free Standard-PCI (OI-, PCI Express) slot.
- Connect the PC to the power supply and switch on the PC.
- The hardware wizard runs in the background and adds the device to the device manager.  
If not choose the option „Install the software automatically“ in the hardware wizard.  
The device will be added to the device manager.
- Check in the Windows device manager, if your ICP DAS Digital I/O card is installed correctly.  
See category DAQ Card.

### Driver versions

- In the driver about dialog (at least) the following driver versions must be listed
  - UniDaq.dll, V1.3.9.0
  - UniDaq.sys or UniDaq64.sys, V1.3.9.0 or  
Please note that the windows device manager shows the software version of the installer package (DLL) instead of the device driver (V1.1.12.0).

## Troubleshooting

### What can I do if the ICP DAS Digital I/O board cannot be accessed?

Please check the following points:

1. Check, if the requirements for Digital I/O card operation are served: [System Requirements](#).
2. Go to the Windows Device Manager and check if the board was correctly installed.  
If the board (category DAQ Card) is marked with a warning icon please update the driver.  
Use the latest driver version as written down in page [Installation](#), topic driver.
3. For more technical assistance contact your NeuroCheck Support, see [Support Services](#).

### Which models or ICP DAS Digital I/O series are supported?

- In theory, Uni DAQ driver SDK supports various Digital I/O types with different features and interfaces.  
However, we only recommend to use hardware that we indeed have tested, see [Supported Hardware](#). For any other hardware we cannot guarantee full functionality.

### Which operating systems are supported?

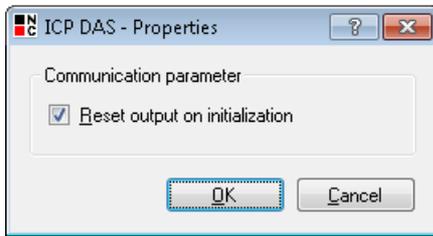
- The ICP DAS driver is available for all common Windows operating systems, see page [System Requirements](#) for details.

### Can I use more than one ICP DAS Digital I/O board in NeuroCheck?

- Yes, the number of boards is not limited in NeuroCheck.

## Device Properties

▾ Screenshot of Properties Dialog



The properties of the Digital I/O device can be shown in the Properties Dialog of the device. To open this dialog, select the device in NeuroCheck Device Manager and click the button **Properties**.

### Communication parameter

Element	Description
Reset output on initialization	Flag to indicate whether to reset the device output image during NeuroCheck startup process. Useful for multi instance operations.

## Support Services

For technical support, please contact your local NeuroCheck partner or NeuroCheck GmbH:

Phone: +49 (0) 7146 - 89 56-40

E-Mail: [support@neurocheck.com](mailto:support@neurocheck.com)

Web: [www.neurocheck.com](http://www.neurocheck.com)

Before contacting us, please provide some important information about your system:

- **Information about your NeuroCheck installation and your PC setup:**

Use the NeuroCheck Diagnostics tool to check your installation and computer configuration.

The NeuroCheck Diagnostics is installed in the "Tools" folder within your NeuroCheck installation.

- **Information about the installed Digital I/O cards:**

the number and the model names of the connected Digital I/O cards can be seen in the Device Manager of NeuroCheck.

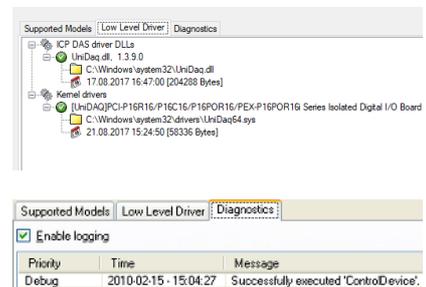
- **Information about your low level driver installation:**

this can be found in the [Info Dialog](#) of the NeuroCheck driver DLL which can be opened by clicking the info button when the Digital I/O device is selected in the Device Manager of NeuroCheck. On page Low Level Driver you see the list of installed low-level drivers. Copy this list to your E-mail by right clicking.

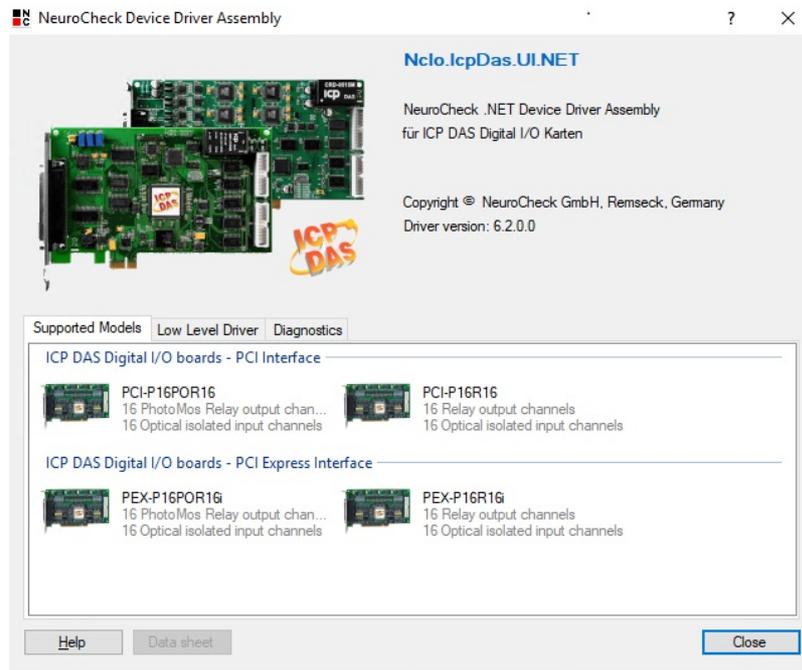
- **Log file information:**

Logging for the driver can be activated in the [Info Dialog](#) of the NeuroCheck driver DLL. It can be opened by clicking the info button when the Digital I/O device is selected in the Device Manager of NeuroCheck. On page Diagnostics of the Info Dialog check the box Enable logging.

Please note that logging will be written to the NeuroCheck log file which must be activated, too. Logging for NeuroCheck is activated in the General Software Settings on page Diagnostics.



## Info Dialog



This dialog displays information about the NeuroCheck driver DLL. You can select between three pages with specific information the dialog provides. On each page the context menu provides a further function.

Element	Description
Help	Click here to open this help file you are currently reading.
Data sheet	If a data sheet is available you can see that button to open the data sheet of the selected Digital I/O model. (Only available on page Supported Models.)
Enable logging	Check the box to activate logging. Please note that the creation log messages can slow down the system. (On page Diagnostics only.)

### Page Supported Models

This page provides information about the models that are supported by this NeuroCheck driver DLL.

Context menu element	Description
Data sheet	Click here to open the data sheet of the selected Digital I/O model.

### Page Low Level Driver

This page provides a list of all driver files from the ICP DAS driver system.

Additionally to the drivers name the list provides information about the version, the location on your computer, the date and time of the last change and the size of the driver file.

Context menu element	Description
Copy to clipboard	Click here to copy the entire list of driver files to the clipboard. From the clipboard you can paste the list to a word processor, text editor or E-mail client.

### Page Diagnostics

This page provides a list of all the last events that occurred within the driver. The list is empty if the logging is disabled. If logging is enabled and the logging of NeuroCheck is enabled as well, all events are written to the NeuroCheck log file ( `NcLog.XML`). Every entry in the list contains the priority, the date and time when it occurred and a description of the event.

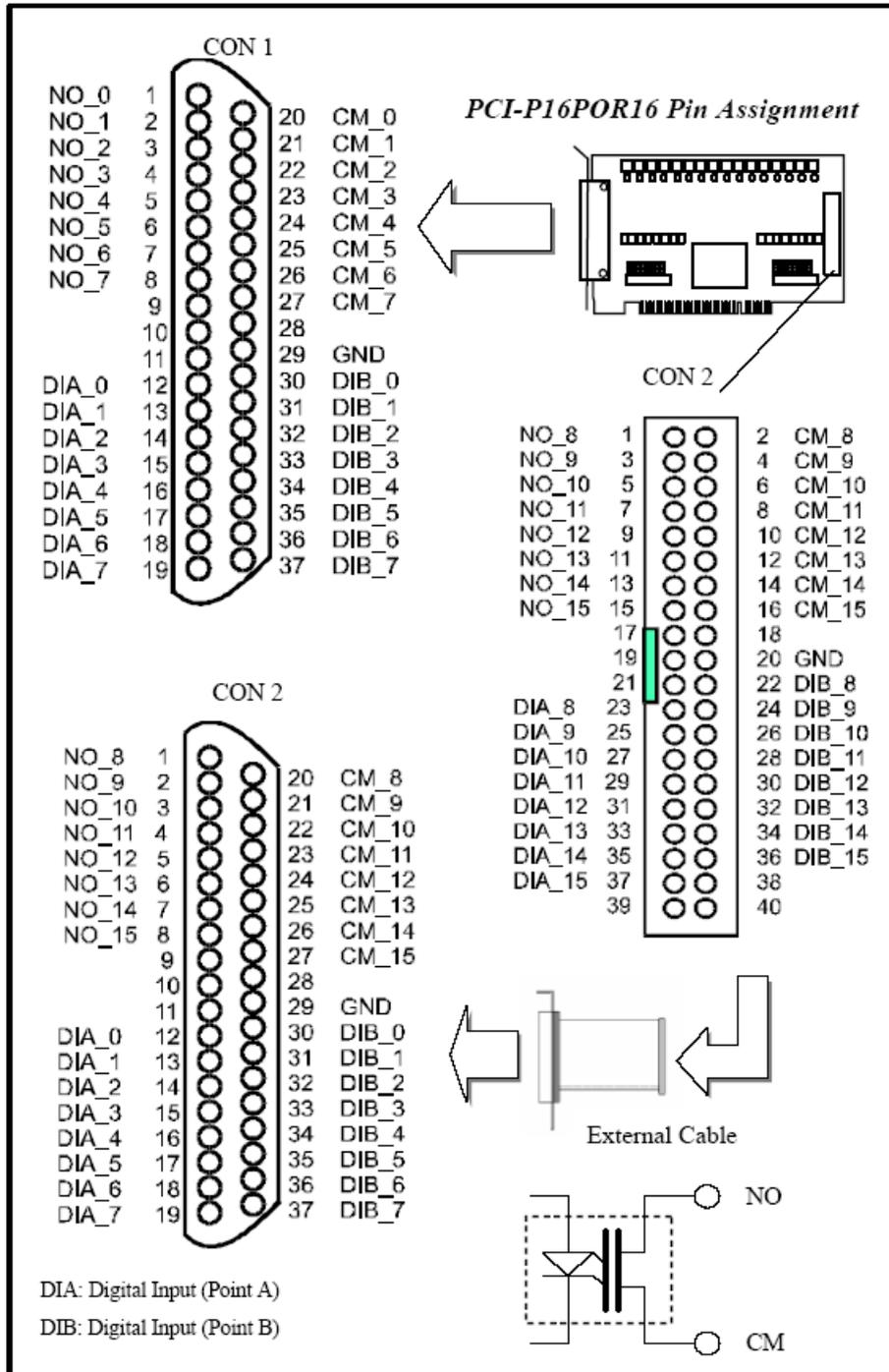
Context menu element	Description
Copy to clipboard	Click here to copy the entire list of events to the clipboard. From the clipboard you can paste the list to a word processor, text editor or E-mail client.

## Pinout

Here the Pin Assignment of the PCI-P16POR16 models is shown.



Please note that the Outputs of the PEX series models CM and NO are switched and not compatible to the pinout of the PCI boards.



Inputs:

Normally Digital Input Point B is set to ground, so you can provide signal state to Digital Input Point A.

**Outputs:**

CM Pins are normally powered with 24V PC. The NO Pins are energized in active state.

For detailed information see hardware manual of the specific board.