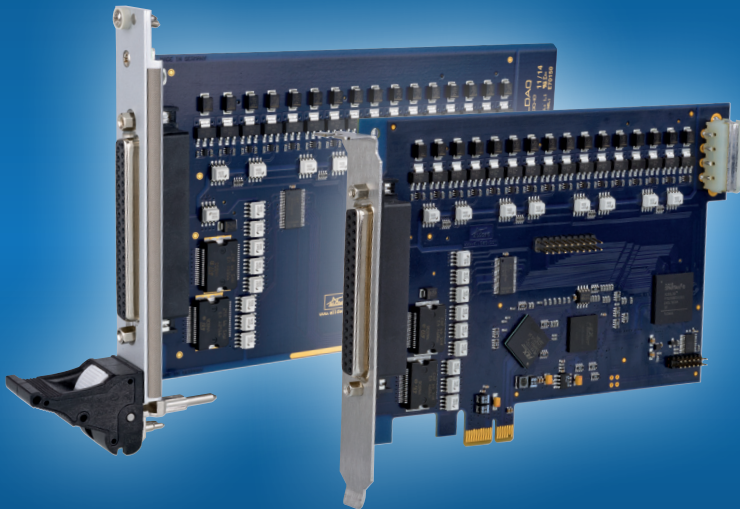# ALLDAQ
Competence in Measurement

Manual

Rev. 1.1 EN

ADQ-10 (cPCI/PCIe)

Digital I/O board with 16 isolated digital inputs, 16 isolated digital outputs, 16 TTL digital I/Os

Imprint

Manual ADQ-10 series
Rev. 1.1
Date: 12/09/2015

Manufacturer and Support

ALLNET® and ALLDAQ® are registered trademarks of the ALLNET® GmbH Computersysteme. For questions, problems and product informations please contact the manufacturer directly:

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All information contained in this manual has been reviewed with great care. Nevertheless errors cannot be eliminated completely. Specifications and the content of this manual are subject to change without notice.

We are appreciated for notification of possible errors.

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Table of Content

1.   Introduction

Please check the box and the content for damages and completeness before taking the device into operation. If any fault should be detected please inform us immediately.

- Shows the packing some evidence to damaging during transport?

- Any traces of use to be recognized at the device?

The device may not be taken into operation if it is damaged. In case of doubt please contact our technical service department.

Please read – before installing the device – this manual watchfully!

1.1   Scope of delivery

- ALLDAQ ADQ-10-cPCI or ADQ-10-PCIe

- 37-pin D-Sub male connector

- 25-pin D-Sub male connector

- Adapter cable with mounting bracket from 25-pin D-Sub female connector to 20-pin IDC connector for cPCI (ADQ-AP-D25F-cPCI) resp. PCIe systems (ADQ-AP-D25F-PCIe)

- Data medium with driver software and documentation

1.2   Safety instructions

Necessarily note the following advices:

- **Note**: a very good ventilation of the board inside the PC system must be guaranteed because of the temperature of the output drivers can increase up to 100 °C on full load.

- Necessarily avoid touching of cables and connectors inside the PC with the board.

- Never expose the device to direct solar radiation during operation.

- Never run the device near heat sources.

- Protect the device before humidity, dust, liquids and fumes.

- Don´t use the device in damp rooms and never in explosive areas.

- A repair may only be done by trained and authorized persons.

- Please note before initial operation of the device especially when using voltages greater 42 V the installation rules and all relevant standards (including VDE standards).

- We recommend to tie all unused inputs basically to the corresponding reference ground to avoid cross talk between the input lines.

- Before connecting or removing cables with your board always disconnect your field wiring from the power supply.

- Ensure that no static discharge can occur passing the board when handling it. Follow the standard ESD safety precautions (see also chapter 2.1 on page 9).

- Never connect devices with voltage-carrying parts, especially not with mains voltage.

- The user must take appropriate precautions to avoid unforseeable misuse.

For damages caused by improper use and subsequent damages any liability by ALLNET® GmbH is excluded.

1.3   Location of installation and mounting

The PC boards of the ADQ-10 series are digital I/O boards for industrial use. Depending on the version the models of the ADQ-10 series are…

… for installation into a free PCI Express slot (ADQ-10-PCIe), or

… for installation into a free CompactPCI slot (ADQ-10-cPCI).

PC boards may not be taken into operation outside of appropriate PC systems. For the order of operation on installing the devices please read the chapter „Initial operation" in this manual and the documentation of your PC.

The ADQ-10 series may only be used in dry rooms. PC boards are not for use with tough environment conditions (e.g. outside). Ensure a very good ventilation. Take care for proper fitting of the connection cables. Installation has to be done in a way that the cables (PC connection and field wiring) are not in tension else they could release itself.

1.4   Short description

The **ALLDAQ ADQ-10** is a digital I/O board for use in industrial automation and control environments. Alternatively models for **CompactPCI** and standard **PCI Express** bus are provided. The board offers 16 opto-isolated digital inputs and 16 opto-isolated digital outputs with an isolation voltage of up to 1 kV.

The **16 opto-isolated inputs** are assembled with over-voltage protection diodes protecting from input voltages >45 V. All isolated inputs can be monitored on bit change or bit-pattern match which can be used to generate an interrupt event.

The source drivers of the **16 opto-isolated outputs** can drive up the 0.7 A per channel in continuous operation. The output voltage range is 10.5..45 V corresponding to IEC 61131. The output buffers come with a thermal overload protection, current limitation, short-circuit protection and an under-voltage monitoring. For powering the outputs an external power supply with sufficient power is required (not included).

On demand the interrupt modes „bit change" and „bit-pattern compare" can be enabled for opto-isolated input ports. The interrupt event (bit no., edge falling/rising) can be interpreted by software.

The opto-isolated digital inputs as well as the opto-isolated digital outputs refer to separate grounds (GND_DI resp. GND_DO). The isolation voltage between input section and output section as well as to PC ground is 1 kVAC$_{RMS.}$

The opto-isolated digital inputs of the ADQ-10 series are assembled with transient voltage suppressor diodes to clamp high voltage transients to ground.

Via an adapter cable with mounting bracket further 16 TTL digital I/Os can be used, which can be accessed as two bi-directional 8 bit ports. They are suitable to connect accessory products.

1.5   System requirements

1.5.1   Hardware

- PC system with a current Intel® or compatible processor based on the x86(-64) architecture
- A free PCI Express x1 resp. CompactPCI slot (4 HP)

1.5.2   Software

System Driver

- Windows Vista (SP2) (32 and 64 bit)
- Windows 7 (32 and 64 bit)
- Windows 8/8.1 (32 and 64 bit)
- Linux on request

ALLDAQ-Manager

By the ALLDAQ-Manager you have central access to the software developer kit (SDK), several utility programs and help files. The ALLDAQ-Manager can be found in the info area of the taskbar (usually at the bottom right corner of the desktop) or by the Windows Start menu. See also chapter 2.4 on page 11.

Software Developer Kit (SDK)

A function library (API) with example code for high-level language programming is included Please note the corresponding help file included with the SDK.

LabVIEW Support

A library with virtual instruments (VIs) for easy access to the ALLDAQ hardware is included with the ALLDAQ SDK.

MATLAB Support

An adapted MATLAB® interface for the ALLDAQ hardware with examples and a help file is included with the ALLDAQ SDK.

2.   Initial operation

2.1   Installing the board

Please read the manual of your computer prior installing the board regarding the installation of additional hardware components.

Handling the board should be done with care to ensure that the device will not be damaged by electrostatic discharge (ESD), mechanical stress or current surges. Ensure to take all safety precautions to avoid an electric shock and follow the standard ESD safety precautions.

Follow this order of operation:

• Unplug the mains plug of your PC system.

• Open the housing as described in the manual of your PC system.

• Make sure that electrostatic discharge cannot occur via the board when you plug it in. At least one hand should be grounded in order to dissipate any static charge.

• Only for PCI Express models: for the +5 V supply of the board an additional supply by the PC power supply is neccessary (current consumption without load about 300 mA). Connect a free power connector of your PC (e. g. as used for powering drives) with the appropriate „MOLEX" male connector of your PCIe board (see the following diagram). On demand adapter (cables), e. g. from 13-pin SATA power supply male connector to 4-pin MOLEX female connector are available in specialized shops.
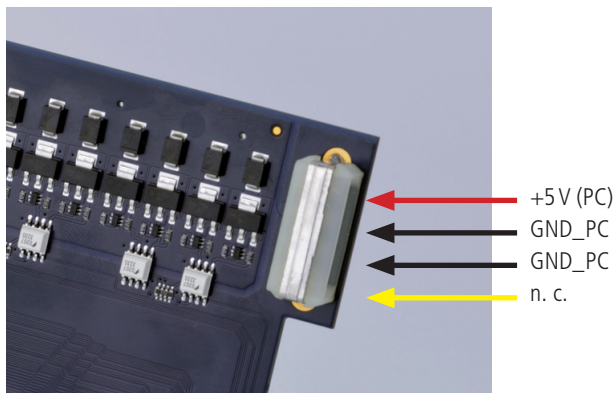

Figure 1: 5 V supply for PCI Express models

⚠ **Attention: If you take the board into operation without connecting the +5 V supply the board can be irreverseable damaged!**

- Push the plug-in board carefully and with only a little force into the appropriate slot. Check that the board is not cant and fully plugged in.

- If you want to use the additional mounting bracket for the TTL digital I/Os choose two slots side by side for installation. Remove (if neccessary) an additional blind bracket for the slot.

- Screw all mounting brackets.

- Close the housing as described in the manual of your PC system

2.2 Software installation

2.2.1 Installation under Windows

Basically use the following procedure:

Download the driver package and run the installation program on your computer before installing the board.

After installing the board (see chapter „Installing the board" on page 9) Windows recognizes the new hardware and starts the driver installation automatically. The installation is Windows compliant – but the procedure can differ depending on your Windows version.

Additional to the driver a software package is included with your board which you can install on your computer. Run the file *ALLDAQDriverSetup32.exe* for 32 bit systems resp. *ALLDAQ-DriverSetup64.exe* for 64 bit systems from the included data medium or in the target directory of your download. After successful installation the ALLDAQ-Manager can be found in the info area of the taskbar (usually at the bottom right corner) or by the Windows Start menu. By the ALLDAQ-Manager you have access to the software developer kit (SDK), several utility programs and help files.

2.3 Test programm

Simple test programs can be found in the ALLDAQ-SDK. For each programming language a subdirectory „Applications" can be found with test programs for your ALLDAQ hardware.

With the ALLDAQ-Manager you can retrieve several information of the installed ADQ hardware.

2.4   ALLDAQ Manager

The ALLDAQ-Manager under Windows gives you a quick overview of the parameters of the ALLDAQ driver system and offers a central access to software tools and help files. You can find the ALLDAQ-Manager in the info area of the taskbar (as a rule at the bottom right) or via the Windows start menue.

ALLDAQ-Manager in overview:

- Information on the installed ALLDAQ hardware in overview

- XML export of the driver configuration for archiving and support

- Tool for interactive illustration of the pin-assignment with the possibility to generate a PDF

- Tool for user balancing

- Convenient access to the software developer kit (SDK) for high-level language programming with examples and simple test programs

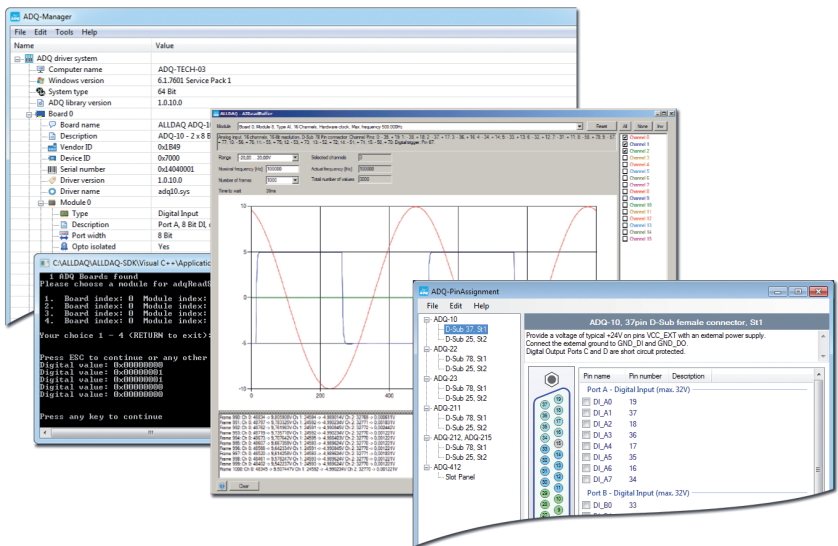- Quick access to the help files

Figure 2: ALLDAQ-Manager and SDK programs
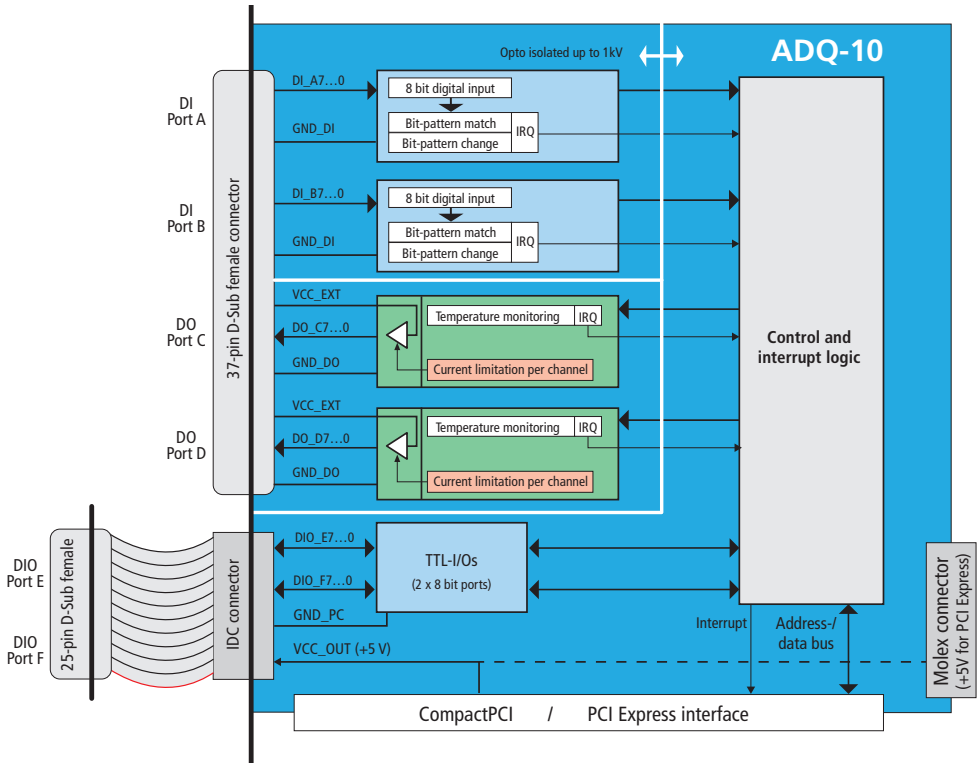
3.   Functional groups

Figure 3: Block diagram ADQ-10

- 16 opto-isolated digital inputs (2 x 8 bit ports)

- 16 opto-isolated digital outputs (2 x 8 bit ports)

- 16 bi-directional TTL digital I/Os (2 x 8 bit ports) can be used by an adapter cable on demand (included)

3.1   Isolated digital inputs

The ADQ-10 series provides 2 opto-isolated digital input ports with 8 bits each. The isolation voltage between digital input section and digital output section as well as to PC ground is $1000\,VAC_{RMS}$. If required all inputs can be monitored on bit change or bit-pattern match and can initiate an interrupt event.

3.1.1   Wiring

The input voltage level is in the range of $0..32\,V$, U_{IH} = typ. $24\,V$. Make sure to establish a connection from the ground of the external wiring to the reference ground of the isolated digital inputs (GND_DI). For high voltage protection every input provides special Zener diodes, so-called transient voltage suppressor diodes (TVS diodes). These diodes can derive peak voltage pulses of U_R (Working Peak Reverse Voltage) higher than $64.4\,V$ to ground (max. $600\,W$ peak power dissipation at pulse width of $1\,ms$).
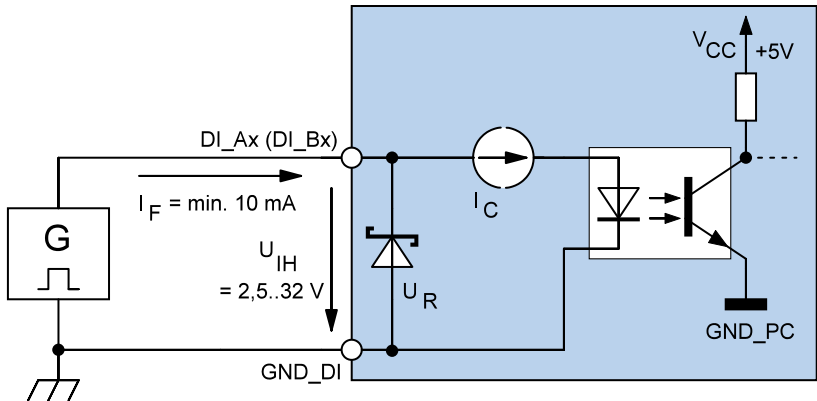

Figure 4: Wiring of the isolated digital inputs

3.1.2   Programming

The input ports (DI_Ax, DI_Bx) can be programmed independently from each other. The port direction is fixed by the hardware.

3.1.2.1   Simple reading

In this operation mode one digital value can be read from the appropriate port.

Follow the order of operation as described in the online help.

3.1.2.2   Streaming Operation

The software-controlled streaming operation enables a continuous reading of digital inputs with up to 1 kS/s.

Follow the order of operation as described in the online help.

3.1.2.3   Interrupt modes

On demand each of the isolated input ports can be monitored on bit change or bit-pattern match and interpreted as an interrupt event. Programming is done in the operation mode „interrupt".

3.1.2.3.1 Bit change

In the operation mode „bit change" one or more input bits which should be monitored for toggling can be masked. For each rising and falling edge, a bit mask defines which bit and which edge should generate an interrupt. As soon as an appropriate edge at minimum one bit masked with „1" occurs, an interrupt is triggerd (see Figure 5).
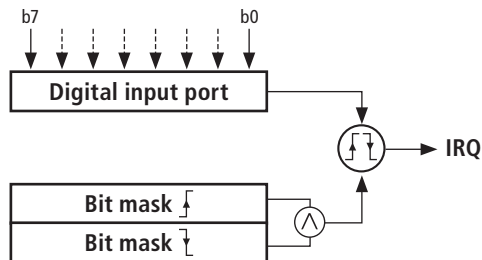

Figure 5: Bit change

Example for bit change:

- When passing the value FFHex in parameter `uiPortBitChangeRisingEdge` of the structure `SADQIRQEnable` in function `adqEnableIRQ()` all bits of an 8 bit wide port are monitored on a rising edge for example. If only single bits should be monitored (e.g. monitoring of bit b2 on rising edge), the corresponding bit of the bit mask must be set to „1" (e. g. `uiPortBitChangeRisingEdge` = 04Hex).

- An interrupt is triggered as soon as a rising edge at bit b2 is detected.

- For evaluation of the interrupt event use the parameters `uiPortBitChangeRising-Edge` resp. `uiPortBitChangeFallingEdge` of the structure `SADQIRQStatus`

in the function `adqWaitIRQ()`. You can check which bit with which edge (rising/falling) triggered the interrupt.

3.1.2.3.2 Bit-pattern compare

In the operation mode „bit-pattern compare" a pre-defined reference bit-pattern is compared with the bit-pattern attached to the corresponding input port. On bit-pattern match an interrupt is triggered (see Figure 6).
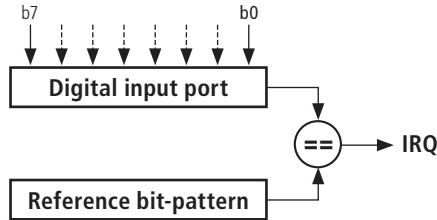

Figure 6: Bit-pattern compare

Example for bit-pattern compare:

- With the parameter `uiPortBitPatternValue` of the structure `SADQIRQEnable` in function `adqEnableIRQ()` the reference bit-pattern is defined.

- Enable the interrupt by passing the boolean value TRUE in parameter `bPortBit-PatternCompare` of the structure `SADQIRQEnable` in function `adqEnable-IRQ()`.

- As soon as all bits at the input port match the reference bit-pattern an interrupt is triggered.

- For evaluation of the interrupt event use the parameter `bPortBitPatternCompare` of the structure `SADQIRQStatus` in the function `adqWaitIRQ()`. TRUE indicates that bit-pattern match occured.

3.2   Isolated digital outputs

The ADQ-10 series provides 16 opto-isolated digital outputs organized as 8 bit wide ports each with a driver chip of type „source". The isolation voltage between digital input section and digital output section as well as to PC ground is 1000 VAC$_{RMS}$.

3.2.1   Wiring

The outputs are dimensioned for a high level of $U_{OH} = 10.5..45\,V$ for programmable logic controllers (PLC) according to IEC 61131. The max. output current is $I_O = 0.7\,A$ per channel. A ground reference to the external output wiring must be done by pin 21 (GND_DO) of ST1.

The output drivers are short-circuit-proof and provide a current limiting for each channel. Active current limitation combined with thermal shutdown and automatic restart, protect the chip

against overload.

In overload condition (T_{TSD} = typ. 175 °C) channel turns OFF and back ON automatically as soon as the junction temperature decreased below the threshold of T_R = 135 °C. Nevertheless, if a case temperature of typ. 130 °C is reached the overloaded channel is turned OFF and will restart only when case temperature has decreased down to T_{CR} = 110 °C. Non overloaded channels continue to operate normally. In overload state the output driver can send an interrupt to the PC. As an additional protection feature the device automatically turns OFF the complete port in case of ground pin disconnection.

For supply of the output drivers an external power supply must be connected to the pins 1, 2 and 20 of ST1 sourcing sufficient power. In case of full load it is min. 11.2 A.

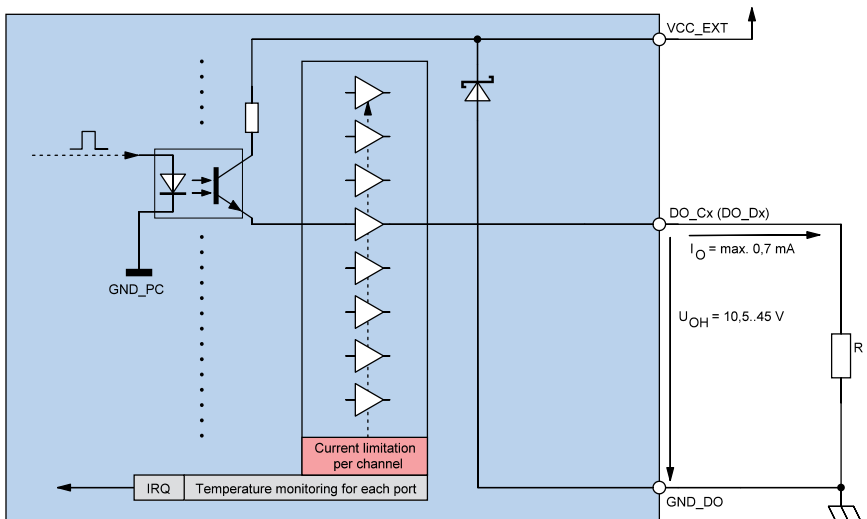**Attention: the 37-pin D-Sub connector (ST1) can grow warm!**

Figure 7: Wiring of the isolated digital outputs

3.2.2 Programming

The output ports (DO_Cx, DO_Dx) can be programmed independently from each other. The port direction is fixed by the hardware.

3.2.2.1 Simple output

In this operation mode one digital value can be output to the appropriate port.

Note: An output port can be read back also!

Follow the order of operation as described in the online help.

3.2.2.2 Streaming Operation

The software-controlled streaming operation enables the output of a bit pattern stream with up to 1 kS/s.

Follow the order of operation as described in the online help.

3.2.2.3 Interrupt modes

On thermal overload of the output drivers the affected chip will be shutdown automatically and an interrupt is triggered, as well as on restart after cooling-down.

Follow the order of operation as described in the online help.

3.3 Bi-directional digital I/Os

The ADQ-10 series provides two bi-directional 8 bit wide digital I/O ports (DIO_Ex and DIO_Fx). Both ports are available by the 25-pin D-Sub female connector ST2 on demand. Depending on the form factor an additional mounting bracket for PCI/PCIe slots (ADQ-AP-D25F-PCI) resp. front bezel for cPCI slots (ADQ-AP-D25F-cPCI) is included (see pinout on page 25).

Note: After power-up all ports are configured as input.

3.3.1 Wiring

When wiring the inputs and outputs take care that the TTL level is met (see specifications on page 23) and that a reference to PC ground (GND_PC at ST2) must be established. The max. output current is $I_O = I_{OL} = I_{OH} = 10\,mA$.
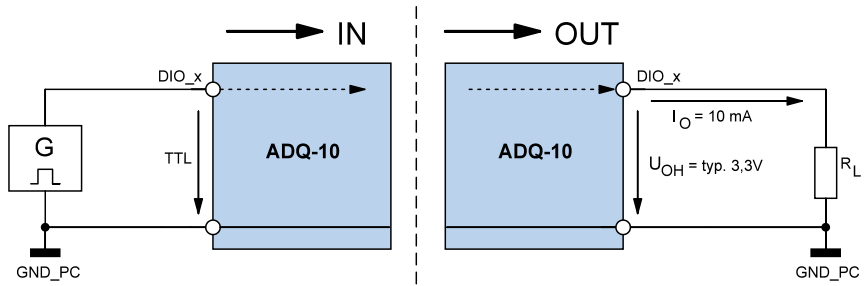
Figure 8: Wiring of the digital I/Os

3.3.2   Programming

The two **8 bit wide** bi-directional digital I/O ports (DIO_Ex, DIO_Fx) can be programmed independently as input or output. After power-up all bi-directional ports are configured as input.

3.3.2.1   Simple input/output

In this operation mode one digital value of the appropriate port can be read resp. output. The port direction is defined by software.

Note: A port configured as output can be read back also!

Follow the order of operation as described in the online help.

3.3.2.2   Streaming Operation

The software-controlled streaming operation enables a continuous reading of digital inputs resp. the output of a bit pattern stream depending on the port direction with up to 1 kS/s.

Follow the order of operation as described in the online help.

4.   Appendix

4.1   Specifications

Opto-isolated digital inputs

Conditions: $V_{CC} = 5\,V \pm 10\%$, $T_A = 25°C$

Element	Condition	Specification
Channels		2 x 8 bit digital input ports
Type		opto-isolated digital inputs (uni-directional)
Isolation voltage	$f = 60\,Hz$, $t = 60\,s$	U_{ISO} max. 1000 VAC$_{RMS}$
Ground reference		GND_DI (isolated from GND_DO and PC ground GND_PC)
Input level		$U_{IH} = 2{,}5..32V$ $U_{IL} = 0..2{,}2V$
Input resistance	$U_I = 24\,V$	$4{,}3\,k\Omega$
Input current	$U_I = 24\,V$	typ. 5,5 mA, max. 6 mA
Input frequency	output toggles, duty cycle 50%, $U_I = 10\,V$	$f_I = 10{,}5\,kHz$
Slew rate	$f_I = 1\,kHz$, $U_I = 10\,V$	$t_{pd,HL}$: typ. 36 µs $t_{pd,LH}$: typ. 1,9 µs
Streaming operation	per port	max. 1 kS/s (via software timer)

Opto-isolated digital outputs

Condition: $T_A = 25°C$

Element	Condition	Specification
Channels		2 x 8 bit digital output ports
Type		opto-isolated digital outputs (uni-directional) according to IEC 61131 for PLC adaption
Isolation voltage	$f = 60\,Hz$, $t = 60\,s$	U_{ISO} max. 1000 VAC$_{RMS}$
Ground reference		GND_DO (isolated from GND_DI and PC ground GND_PC)
Output level		$U_{OH} = 10{,}5..45\,V$ $U_{OL} = 0..2{,}2\,V$
Output current	typ. $U_O = 24\,VDC$	I_O max. 0,7 A per channel (parallel operation possible)
Overload protection	per channel	current limitation (short-circuit-proof)
	per port	dependent of junction and case temperature (T_{TSD}, T_R and T_{CR})
Streaming operation	per port	max. 1 kS/s (via software timer)
Power supply Conditions: VCC_EXT = 10,5…45 VDC, T_J = -40…+100°C		
VCC_EXT	Pin 1, 2, 20	10,5..45 VDC; typ. 24 VDC

Element	Condition	Specification
U_{USD} (Undervoltage shutdown)		7..10,5 V
R_{ON} (ON state resistance)	$I_O = 0{,}5 A$; $T_J = 25°C$ $I_O = 0{,}5 A$	typ. 150 mΩ, max. 185 mΩ max. 280 mΩ
I_S (Supply current)	inactive; VCC_EXT = 24 VDC; $T_{CASE} = 25°C$	max. 150 µA
	aktive (all channels); VCC_EXT = 24 VDC; $T_{CASE} = 100°C$	max. 12 mA
$I_{L(off)}$ (OFF state output current)	$U_I = U_O = 0 V$	min. 0 µA, max. 5 µA
$U_{O(off)}$ (OFF state output voltage)	$U_I = 0 V$; $I_O = 0 A$	max. 3 V
$t_{d(VCCon)}$ (Power-on delay time)	Power-on from VCC_EXT until U_O is set	typ. 1 ms
Timings Condition: VCC_EXT = 24 VDC		
t_{on} (Turn-on time)	$R_L = 48Ω$, to 80% U_O	typ. 50 µs; max. 100 µs
t_{off} (Turn-off time)	$R_L = 48Ω$, to 10% U_O	typ. 75 µs; max. 150 µs
$dU_O/dt_{(on)}$ (Turn-on voltage slope)	$R_L = 48Ω$, from $U_O = 2{,}4V$ to 19,2V	typ. 0,7 V/µs
$dU_O/dt_{(off)}$ (Turn-off voltage slope)	$R_L = 48Ω$, from $U_O = 21{,}6V$ to 2,4V	typ. 1,5 V/µs
Limiting values		
T_{CSD} (Case shut-down temperature)		min. 125 °C; typ. 130 °C; max. 135 °C
T_{CR} (Case reset temperature)		min. 110 °C
T_{TSD} (Junction shut-down temperature)		min. 150 °C; typ. 175 °C; max. 200 °C
T_R (Junction reset temperature)		min. 135 °C
I_{lim} (DC short-circuit current)	VCC_EXT = 24 VDC $R_L = 10 mΩ$	min. 0,7 A; max. 1,7 A

Bi-directional digital I/Os (TTL)

Conditions: $T_A = 25°C$

Element	Condition	Specification
Channels		2 x 8 bit digital input/output ports
Type		TTL (bi directional, direction per 8 bit port configurable)
Ground reference		PC ground (GND_PC)
U_{IH}		min. 2,0 V
U_{IL}		max. 0.8 V
I_I		typ. ±1 µA
U_{OH}	$I_O = -10$ mA	min. 2.4 V; typ. 3.3 V
U_{OL}	$I_O = 10$ mA	max. 0.5 V
I_O		±10 mA
Streaming operation	per port	max. 1 kS/s (via software timer)

General

Element	Condition	Specification
PC interface (depending on model)	cPCI models	CompactPCI bus (32 bit, 33 MHz) Rev. 2.2
	PCIe models	PCI-Express x1 Rev. 1.0
Power supply for outputs	VCC_EXT: typ. 24 VDC	external power supply for opto-isolated outputs; at full load min. 11,2 A
VCC_OUT at ST2	Auxiliary voltage	+5 V from PC
+5 V supply (only PCI Express)		+5 V supply via MOLEX connector to connect with the PC power supply
Power consumption	+5 V	typ. 300 mA (without ext. load)
Operating temperature	Operation	0..70 °C
	Storage	-40..100 °C
Humidity	Operation	20%..55% (not condensing)
	Storage	5%..90% (not condensing)
Physical size (without mounting bracket and connectors)	cPCI models	3 HE CompactPCI board
	PCIe models	158 mm x 111.15 mm (B x H)
Connectors	cPCI models	37-pin D-Sub female connector (ST1) 25-pin D-Sub female connector (ST2) via additional mounting bracket
	PCIe models	37-pin D-Sub female connector (ST1) + MOLEX connector (+5V) 25-pin D-Sub female connector (ST2) via additional mounting bracket
Certifications		EMC Directive 2004/108/EG, Emission EN 55022, Noise immunity EN 50082-2, RoHS
Manufacturer warranty		36 months

4.2   Pinout

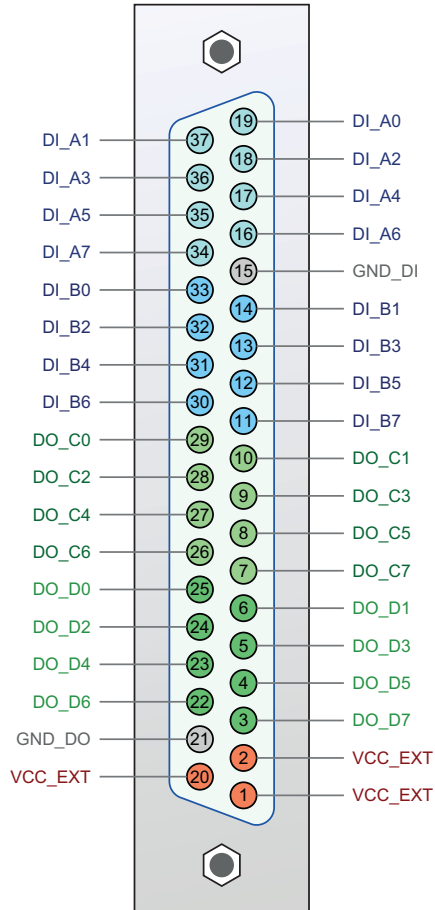### 4.2.1   37-pin D-Sub connector (ST1)

Figure 9: Pinout 37-pin D-Sub female connector (ST1)
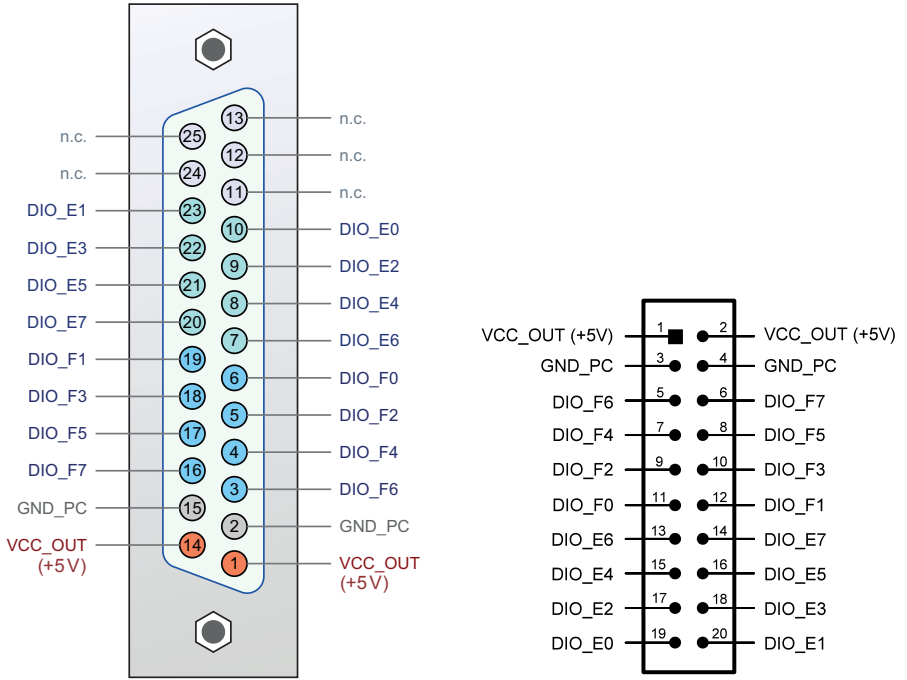
4.2.2   25-pin D-Sub connector (ST2)

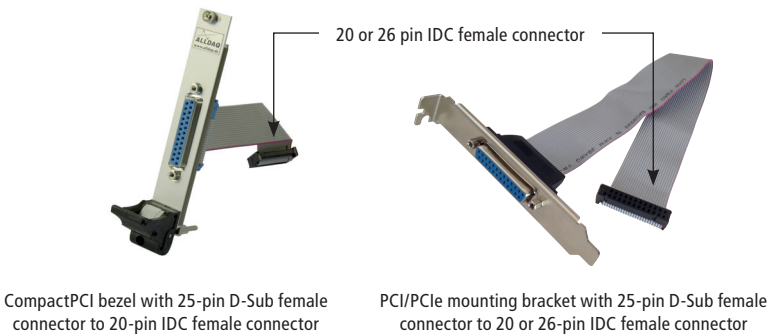Figure 10:   Pinout 25-pin D-Sub female connector (left) and IDC connector ST2 (right)

CompactPCI bezel with 25-pin D-Sub female
connector to 20-pin IDC female connector

PCI/PCIe mounting bracket with 25-pin D-Sub female
connector to 20 or 26-pin IDC female connector

Figure 11:   Additional mounting bracket/bezel

Connection of adapter cable with mounting bracket

For using the TTL digital I/Os (port E and F) an adapter cable with mounting bracket from the IDC connector to the 25-pin D-Sub female connector is required (comes with the board).

Note: Alternatively an adapter cable with 20-pin or 26-pin IDC female connector is included with your package. The pinout of ST2 is the same in both cases.
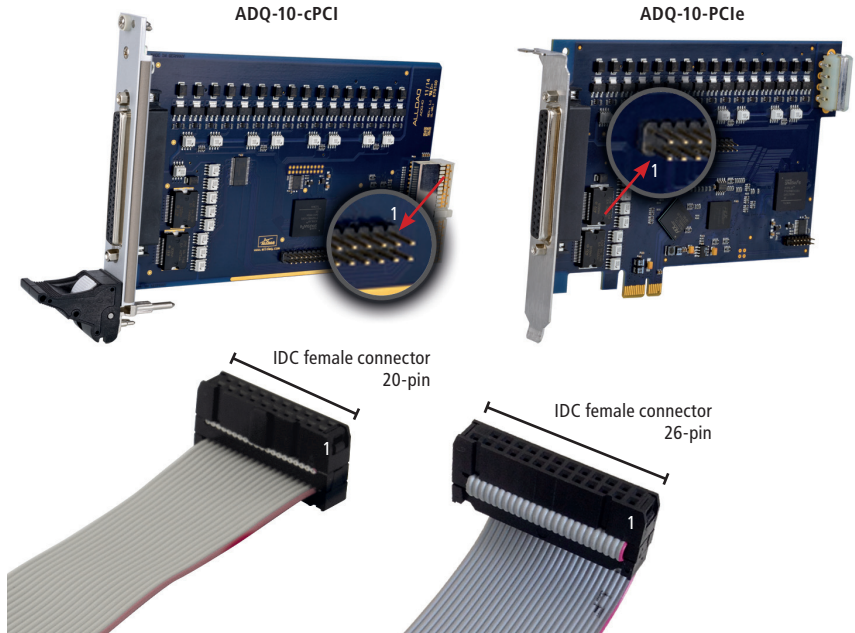

Figure 12: Connection of flat ribbon cable for ST2

Attention: when connecting the adapter cable make sure to plug pin 1 of the flat ribbon cable (red marked line) to pin 1 of the IDC connector ST2 as shown above. If the version with 26-pin IDC female connector was included, the IDC female connector overlaps…

…at the left on CompactPCI versions

…at the right on PCI-Express versions

The function of the digital I/Os is fully given in both cases.

4.3   Accessories

ADQ-TB-D25M-HUT (Art.-No. 111749)

25-pin connector block for mounting on DIN rail, 25-pin D-Sub male connector to clamps of type „Phoenix"

ADQ-TB-D37M-HUT (Art.-No. 111750)

37-pin connector block for mounting on DIN rail, 37-pin D-Sub male connector to clamps of type „Phoenix"

ADQ-CR-D25M-D25F-1,8m (Art.-No. 111752)

Shielded round cable from 25-pin D-Sub male connector to 25-pin D-Sub female connector, length: 1,8 m

ADQ-CR-D37M-D37F-2m (Art.-No. 111753)

Shielded round cable from 37-pin D-Sub male connector to 37-pin D-Sub female connector, length: 2 m

ADQ-AP-D25F-cPCI (Art.-Nor. 111755 - included with ADQ-10-cPCI)

CompactPCI bezel with 25-pin D-Sub female connector to 20-pin IDC female connector

ADQ-AP-D25F-PCI (Art.-No 111756 - included with ADQ-10-PCIe)

PCI mounting bracket with 25-pin D-Sub female connector to 20-pin IDC female connector, or...

ADQ-AP-D25F26-PCI (Art.-No. 113788 - alternatively to 111756)

PCI mounting bracket with 25-pin D-Sub female connector to 26-pin IDC female connector,

4.4   Manufacturer and support

ALLNET® and ALLDAQ® are registered trademarks of the ALLNET® GmbH Computersysteme. For questions, problems and product informations please contact the manufacturer directly:

ALLNET® GmbH Computersysteme
Division ALLDAQ
Maistrasse 2
D-82110 Germering
E-Mail: support@alldaq.com
Phone: +49 (0)89 894 222 74
Fax: +49 (0)89 894 222 33
Internet: www.alldaq.com

4.5   Important notes

4.5.1   Packaging ordinance

Basically manufacturer and distributors are committed to take care, that sales packaging are withdrawn after use from the end user and applied to a new disposal or to a material recycling as a matter of principle (translated according to § 4 sentence 1 of VerpackVO). If you have problems as customer on disposal of packaging and shipping material please write an email to info@allnet.de.

4.5.2   Recycling note and RoHS compliance

Please note, that parts of products of ALLNET® GmbH should be disposed in recycling centers resp. may not be disposed via the household waste (printed circuit boards, power adapters and so on).

ALLNET® products are manufactured in accordance with RoHS (RoHS = Restriction of the use of certain hazardous substances).

4.5.3   CE certification

The ADQ-10 series is CE certified.

This device is compliant to the EU directive: 2004/108/EG regarding the electromagnetic compatibility (EMC) and the cross approval of their conformity. The conformity with the directive as stated above is confirmed by the CE sign on the device.

4.5.4   Warranty

Within the warranty time we eliminate manufacturing and material defects free of charge. The warranty terms valid for your country can be found on the homepage of your distributor. If you have questions or problems applying the warranty you can contact us during our normal opening hours under the following phone number +49 (0)89 894 222 – 22 or by email: support@alldaq.com.

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ALLDAQ

Competence in Measurement