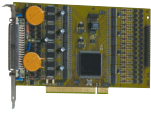
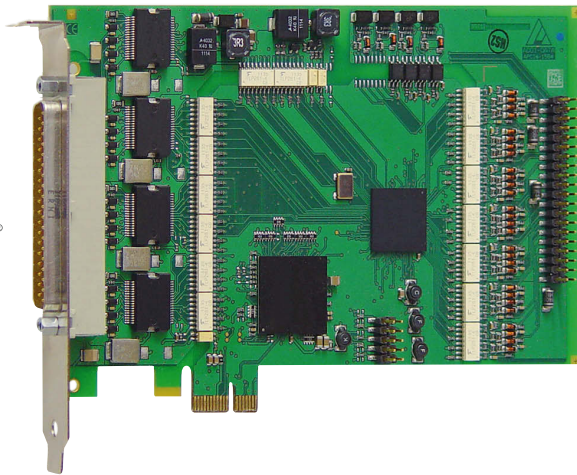


Digital I/O board, optically isolated, 64 digital inputs and outputs, 5 V, for PCI Express



Also for **PCI**
See APCI-1564, page 164



Features

Inputs

- 32 optically isolated inputs, 5 V, incl. 16 interruptible inputs
- Channels 0–2 can be used as 32-bit counter inputs (up to 500 kHz)
- Reverse voltage protection
- All inputs are filtered

Outputs

- 32 optically isolated outputs, 5 V
- APCI-e1564-5V: Open Collector outputs
- APCI-e1564-5V-HS: High-Side outputs
- Output current per channel 50 mA
- Watchdog for resetting the outputs to "0"
- At Power-On, reset of the outputs to "0"
- Current limit: ~0.5 A per 8 channels (through PTC)
- Short-circuit current per output ~0.5 A typ.
- Self-resetting fuse (electronic fuse)
- Overtemperature and overvoltage protection
- External voltage supply screened and filtered

Timer / Watchdog / Counter

- 2 timers (12-bit), of which one can be used as a watchdog
- 3 counter (32-bit)

Safety features

- Optical isolation 1000 V
- Creeping distance IEC 61010-1
- Protection against fast transients (burst), overvoltage, electrostatic discharge and high-frequency EMI
- Separate ground line for inputs and outputs

APCI-e-1564-5V / APCI-e-1564-5V-HS

PCI Express interface

32 digital inputs, 5 V,
including 16 interruptible inputs

32 digital outputs, 5 V, 50 mA/channel,
Open Collector (5V) or High-Side (5V-HS)

Optical isolation 1000 V

Input and output filters

Connection through industry-standard

D-Sub connector

Applications

- Industrial I/O control
- PLC coupling
- Signal switching
- Interface to electromechanical relays
- Automatic test equipment
- ON/OFF monitoring of motors, lights...
- Watchdog timer
- ...

Software drivers

A CD-ROM with the following software and programming samples is supplied with the board.

Standard drivers for:

- Linux
- 32-bit drivers for Windows 8 / 7 / Vista / XP / 2000
- Signed 64-bit drivers for Windows 8 / 7 / XP
- Real-time use with Linux and Windows on request

Drivers and samples for the following compilers and software packages:

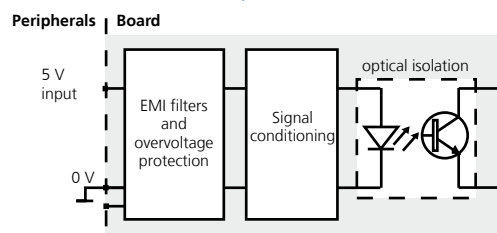
- C#.NET, C

On request:

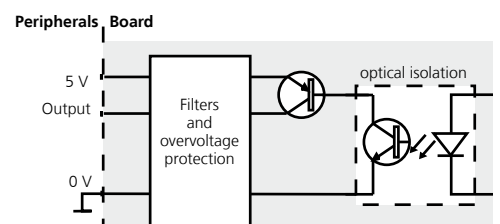
Further operating systems, compilers and samples.

Driver download: www.addi-data.com/downloads

Protective circuit for the input channels



Protective circuit for the output channels



* Preliminary product information

Specifications*

Digital inputs

Number of inputs: (common ground acc. to IEC 1131-2)	32 digital inputs, channel 0-2 can be used as 32-bit counter inputs (up to 500 kHz)	
Interruptible inputs:	16 channels (channel 4 to 19)	
Optical isolation:	1000 V through opto-couplers, from PC to peripheral	
Nominal voltage:	5 V	
Input current:	Channel 0-3:	8.5 mA at 5 V, typ.
	Channel 4-31:	5.9 mA at 5 V, typ.
Input frequency (max.):	Channel 0-3:	500 kHz at 5 V
	Channel 4-31:	5 kHz at 5 V
Logic input levels:	UH (max.):	6 V / 7.8 mA typ. (channel 4-31)
	UH (min.):	4 V / 4.1 mA typ. (channel 4-31)
	UH (max.):	6 V / 11.5 mA typ. (channel 0-3)
	UH (min.):	4 V / 5.6 mA typ. (channel 0-3)
	UL (max.):	2 V / 0.8 mA typ. (channel 4-31)
	UL (max.):	2 V / 1.1 mA typ. (channel 0-3)
	UL (min.):	0 V / 0 mA typ.
Filters/protective circuit:	Input filters, transil diode, RC filters, Z diode, opto-couplers	

Digital outputs

Number of outputs:	32 digital outputs	
Output type:	APcLe-1564-5V:	Open Collector
	APcLe-1564-5V-HS:	High-Side (load to ground) acc. to IEC 1131-2
Optical isolation:	1000 V (through opto-couplers), from PC to peripheral	
Nominal voltage:	5 V	
Supply voltage range:	5 to 12 V (5V-Version) 5 to 35 V (5V-HS-Version)	
Current limit:	0.5 A (typ.) per 8 channels (through PTC)	
Output current per output:	50 mA (typical)	
Short-circuit current per output:	0.5 A (typ.)	

Timer/watchdog

Timer:	2 x 12-bit, 1 x programmable as watchdog from 1 µs to 4095 s
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Safety

Watchdog:	For resetting the outputs to "0"
Common diagnostics:	For all 16 channels at overtemperature of one channel

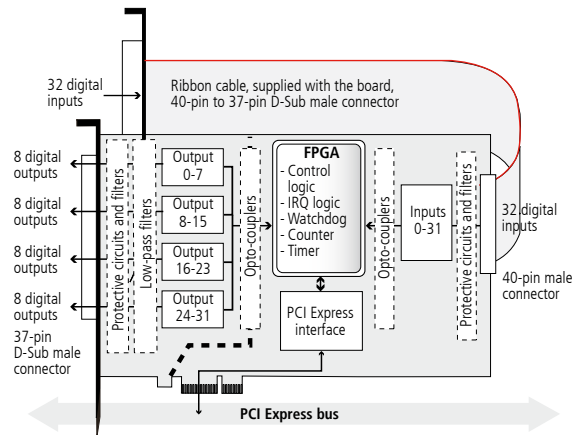
EMC – Electromagnetic compatibility

The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC test report is available on request.

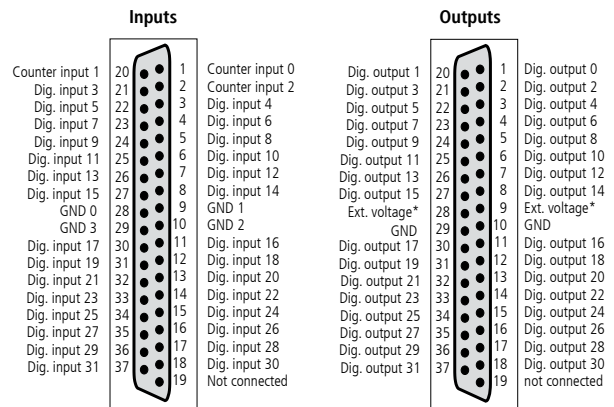
Physical and environmental conditions

Dimensions:	168 x 99 mm
System bus:	Acc. to PCI Express base specification, Revision 1.0a (PCI Express 1.0a)
Space required:	1-/4-/8-/16-lane PCI Express slot
Operating voltage:	+ 3.3 V from PC
Current consumption:	Inputs and outputs inactive 340 mA ± 10 %, typical inputs and outputs active 590 mA ± 10 %, typical
Front connector:	37-pin D-Sub male connector
Temperature range:	0 to 60 °C (with forced cooling)

Simplified block diagram

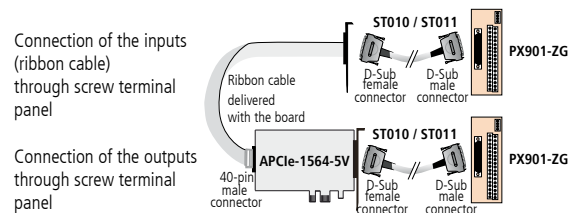


Pin assignment – 37-pin D-Sub male connector



* 5V-version (Open Collector): 5 to 12 V
5V-HS-version (High-Side): 5 to 35 V

ADDI-DATA connection



Ordering information

APcLe-1564-5V / APcLe-1564-5V-HS

Digital I/O board, optically isolated, 64 digital inputs and outputs, 5 V, for PCI Express. Incl. ribbon cable, technical description and software drivers.

Versions

APcLe-1564-5V:	64 digital I/O, 5 V, Open Collector outputs
APcLe-1564-5V-HS:	64 digital I/O, 5 V, High-Side outputs

Accessories

PX901-ZG:	Screw terminal panel for DIN rail
ST010:	Standard round cable, shielded, twisted pairs, 2 m
ST011:	Standard round cable, shielded, twisted pairs, 5 m

* Preliminary product information