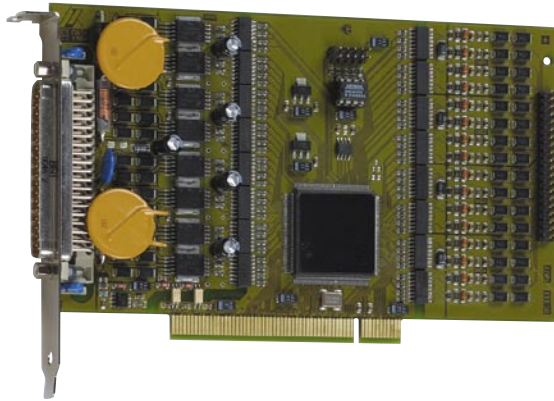


Digital I/O board, optically isolated, 64 digital inputs and outputs, 5 V



PCI 32-bit

Also for
PCI EXPRESS see
page 122



Signed 64-bit drivers
for Windows 7/Vista/XP



LabVIEW™



LabWindows/CVI™



Features

- 32-bit, 33 MHz, PCI interface
- PCI 5 V
- 32 optically isolated digital inputs, 5 V, including 16 interruptible and 3 counter inputs
- Inputs organised in 4 groups of 8 channels, each group has its own ground line
- Reverse voltage protection
- All inputs are filtered

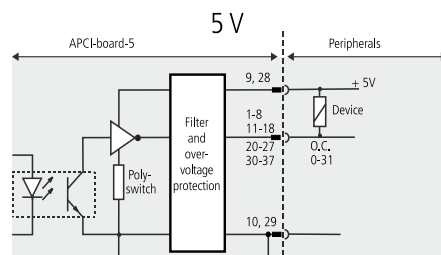
Outputs

- 32 optically isolated digital outputs, 5 V
- APCI-1564-5V: Open Collector outputs
- APCI-1564-5V-HS: High-side outputs
- Output current per channel 50 mA
- Watchdog for resetting the outputs to "0"
- At Power-On, the outputs are reset to "0"
- Total current for 8 outputs ~ 0.5 A (via PTC)
- Electronic fuse
- Short-circuit current per output ~1.5 A
- Overtemperature and overvoltage protection
- Output capacitors against electromagnetic emissions
- Ext. 24 V voltage supply screened and filtered
- Shutdown logic, when the external supply voltage drops below 5 V

Safety features

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

Connection principle of the 5 V outputs



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

32 digital inputs, 5 V,
including 16 interruptible, filtered

32 digital outputs, 5 V, 500 mA/channel, filtered
open collector (5V) or high side (5V-HS)

Optical isolation 1000 V

Watchdog, timer, 3 x 32-bit counters
up to 500 kHz

The outputs are reset to "0" at Power-On

- Interrupt started through counter, timer
- Separate ground lines for inputs and outputs

Applications

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

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
- RTX drivers (real-time)

Drivers and samples for the following compilers and software packages:

- .NET
- Microsoft VC++ • Borland C++
- Visual Basic • Delphi
- LabVIEW • LabWindows/CVI

ADDIPACK functions:

Digital input • Digital output
Watchdog • Timer • Counter

On request:

Further operating systems, compilers and samples.

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

Specifications

Digital inputs

Number of inputs:	32; 4 groups of channels with common ground: Input: 0-7, 8-15, 16-23, 24-31 - 0-2: fast counter inputs, 500 kHz - 4-19: interruptible inputs	
Optical isolation:	Through opto-couplers, 1000 V	
Input current at 5 V:	Channel 0-3 8,5 mA typ.	Channel 4-31 6 mA typ.
Logic input levels:		
U nominal	5 V	5 V
UH max.	6 V / 11.3 mA typ.	6 V / 8.4 mA typ.
UH min.	4 V / 5.5 mA typ.	4 V / 4 mA typ.
UL max.	2 V / 1 mA typ.	2 V / 0.8 mA typ.
UL min.	0 V / 0 mA typ.	0 V / 0 mA typ.
Signal delay:	1 µs	70 µs
Maximal input frequency:	500 kHz	5 kHz

Digital outputs

Number of outputs:	32, optically isolated up to 1000 V	
Output type:	High side (load to ground) acc. to IEC 1131-2 Open collector (only APCI-1564-5V)	
Nominal voltage:	5 V	
Supply voltage:	5 V to 35 V (APCI-1564-5V-HS) 5 V to 12 V (APCI-1564-5V)	
Max. current for 16 / 32 outputs:	0.8 A typ./1.6 A typ.	
Output current/output:	50 mA max.	
Short-circuit current/output shutdown at 24 V, $R_{load} < 0.1 \Omega$:	1.5 A	
RDS ON resistance:	0.4 Ω max.	
Switch-on time:	I out=50 mA, load = resistance: 250 µs typ.	
Switch-off time:	I out=50 mA, load = resistance: 3 µs typ.	
Overtemperature (shutdown):	170 °C (output driver)	
Temperature hysteresis:	20 °C (output driver)	

Safety

Diagnostics:	Pin 19: status bit or interrupt to the PC
Timer:	12-bit
Watchdog:	8-bit, timer-programmable from 20 ms to 5 s in steps of 20 ms

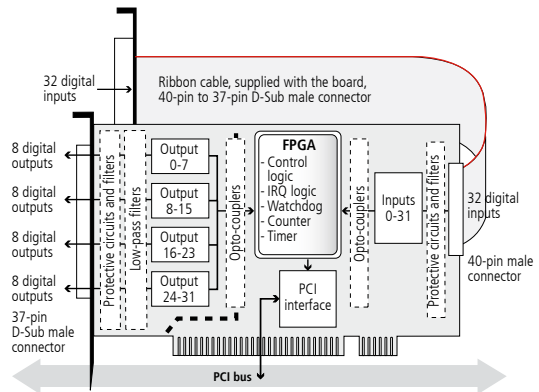
EMC – Electromagnetic compatibility

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.

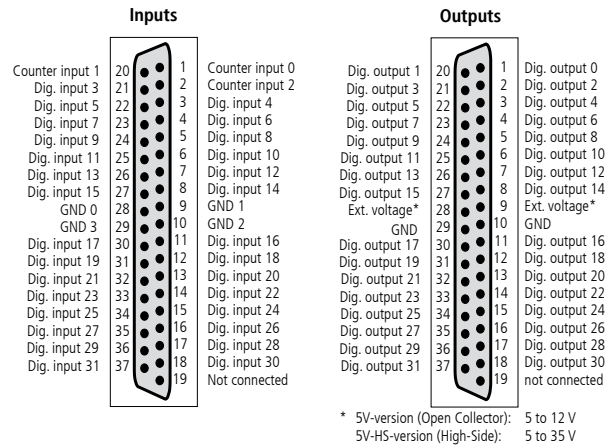
Physical and environmental conditions

Dimensions:	171 x 99 mm
System bus:	PCI 32-bit 5 V acc. to specification 2.1 (PCISIG) or 3.3 V
Space required:	1 PCI slot + 1 additional slot opening
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption:	410 mA ± 10 % typ.
Front connector:	37-pin D-Sub male connector for 32 digital outputs
Additional connector:	37-pin D-Sub male connector on separate bracket for 32 digital inputs
Temperature range:	0 to 60 °C (with forced cooling)

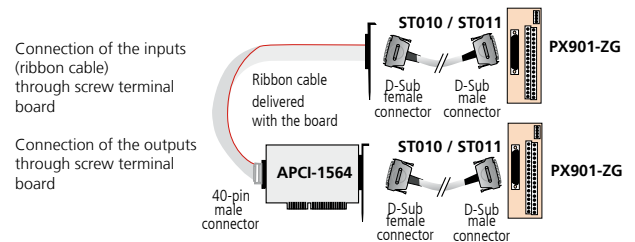
Simplified block diagram



Pin assignment – 37-pin D-Sub male connector



ADDI-DATA connection



Ordering information

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

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

APCI-1564-5V: open collector outputs

APCI-1564-5V-HS: high-side outputs

Accessories

PX 901-ZG: Screw terminal panel (only for APCI-1564-5V)

ST010: Standard round cable, shielded, twisted pairs, 2 m

ST011: Standard round cable, shielded, twisted pairs, 5 m