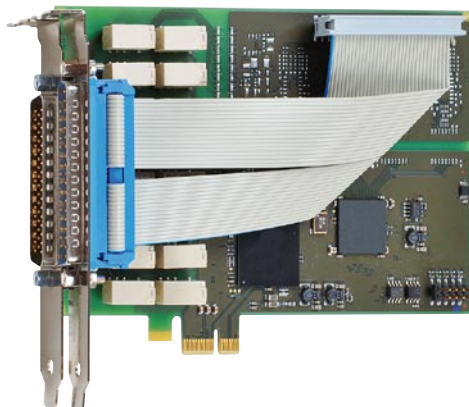


Relay board, optically isolated, 8/16 relays, 8/16 digital inputs, 24 V

PCI EXPRESS®



Also for **PCI**
see APCI-2200, page 118



Signed 64-bit drivers for
Windows 7/XP



LabVIEW™



LabWindows/CVI™

Features

Relays

- 8 or 16 electromechanical relays with change-over contacts
- Max. switching voltage for the relays: 200 VDC, 200 VAC
- Max. switching capacity: 60 W, max. 2 A
- Short response time
- Watchdog: switched on/off through software

Digital inputs

- 8 or 16 inputs, optically isolated, incl. 7 or 15 interruptible inputs
- Input voltage 24 V

Safety features

- EMC tested
- Watchdog activity can be read back
- Optical isolation of the relays
- Creeping distance IEC 61010-1

Applications

- Industrial digital I/O controlling
- Automatic test equipment
- Signal switching
- Interface to electromechanical relays
- ON/OFF monitoring of motors, lights...
- Alarm monitoring
- Machine interfacing
- ...

APCIe-2200

8 or 16 relay output channels

Max. switching voltage 200 VDC, 200 VAC

max. switching current 2 A

8/16 digital inputs 24 V,

incl. 7/15 interruptible inputs

Optical isolation 1000 V

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:

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

ADDIPACK functions:

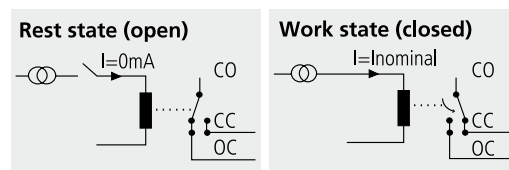
- Digital input • Digital output
- Watchdog • Timer

On request:

Further operating systems, compilers and samples.

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

Function principle of the relays



CO: Change-over contact
CC: Closing contact
OC: Opening contact

Specifications

Relays

| | |
|--------------------------|--|
| Type of contacts: | 8/16 change-over |
| Max. switching voltage: | 200 VDC, 200 VAC |
| Max. switching current: | 2 A |
| Max. switching capacity: | 60 W |
| Contact resistance: | < 100 mΩ |
| Contact material: | Ag and Au plated |
| Response time: | Max. 4 ms, typ. 2.5 ms |
| Release time: | Max. 4 ms, typ. 0.9 ms |
| Mechanical life: | 10 ⁸ operations |
| Electrical life: | 10 ⁸ operations at rated load |

Digital inputs

| | |
|--------------------------|---|
| Number of inputs: | 8/16 incl. 7/15 interruptible inputs |
| Optical isolation: | Through opto-couplers, 1000 V |
| Nominal voltage: | 24 V |
| Input current: | 5 – 8 mA |
| Signal delay: | 70 μs (at 24 V) |
| Maximal input frequency: | 10 kHz (at 24 V) |

Timer

| | |
|----------------|---------------------------------------|
| Time settings: | 16-bit, programmable, 1 μs to 65535 s |
|----------------|---------------------------------------|

Safety

| | |
|---------------|---|
| Test voltage: | 1000 V |
| Watchdog: | For resetting the outputs to "0": 12-bit, programmable, 1 μs to 4095 s |

EMC – Electromagnetic compatibility

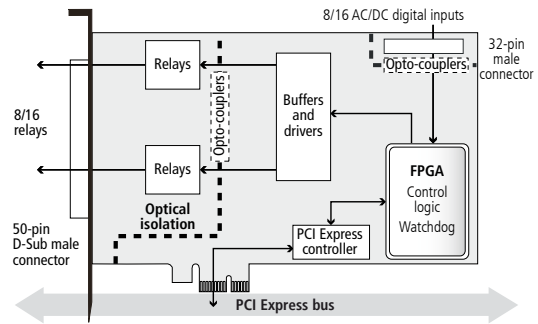
The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC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

Physical and environmental conditions

| | |
|---------------------------|--|
| Dimensions: | 149 x 99 mm |
| System bus: | Acc. to PCI Express base specification, Revision 1.0a (PCI Express 1.0a) |
| Space required: | 1-/4-lane, 1 PCI Express slot |
| Operating voltage: | +3.3 V from the PC |
| Max. current consumption: | 1 A ±10 % (typ. APcLe-2200-16-16) |
| Front connector: | 50-pin D-Sub male connector |
| Additional connector: | 32-pin male connector. APcLe-2200-16-8/APcLe-2200-16-16: Connection with delivered ribbon cable. Connects the board to a bracket with a 37-pin D-Sub male connector. For connecting the PX901-ZG. |
| Temperature range: | 0 up to 60 °C (with forced cooling) |



Simplified block diagram



Pin assignment – 50-pin D-Sub connector APcLe-2200-16-8/APcLe-2200-16-16

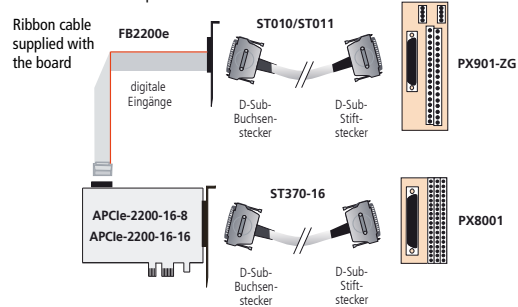
| Pin | Pin | Pin | Pin |
|-----|----------------|-----|----------------|
| 34 | OC of relay 0 | 34 | CO of relay 0 |
| 35 | OC of relay 1 | 35 | CO of relay 1 |
| 36 | OC of relay 2 | 36 | CO of relay 2 |
| 37 | OC of relay 3 | 37 | CO of relay 3 |
| 38 | OC of relay 4 | 38 | CO of relay 4 |
| 39 | OC of relay 5 | 39 | CO of relay 5 |
| 40 | OC of relay 6 | 40 | CO of relay 6 |
| 41 | OC of relay 7 | 41 | CO of relay 7 |
| 42 | OC of relay 8 | 42 | CO of relay 8 |
| 43 | OC of relay 9 | 43 | CO of relay 9 |
| 44 | OC of relay 10 | 44 | CO of relay 10 |
| 45 | OC of relay 11 | 45 | CO of relay 11 |
| 46 | OC of relay 12 | 46 | CO of relay 12 |
| 47 | OC of relay 13 | 47 | CO of relay 13 |
| 48 | OC of relay 14 | 48 | CO of relay 14 |
| 49 | OC of relay 15 | 49 | CO of relay 15 |
| 50 | - | 50 | - |

OC: Opening contact CC: Closing contact CO: Change-over contact

ADDI-DATA connection

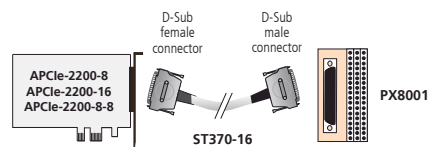
Example 1: APcLe-2200-16-8/ APcLe-2200-16-16

- Connection of the relay outputs through screw terminal panel PX8001
- Connection of the digital inputs through ribbon cable to the screw terminal panel PX901-ZG



Example 2: APcLe-2200-8/APcLe-2200-8-8/ APcLe-2200-16

- Connection of the relay outputs and the digital inputs through front connector to the screw terminal panel



Ordering information

APcLe-2200

Relay board, optically isolated, 8/16 relays, 8/16 digital inputs, 24 V. Incl. technical description and software drivers.

APcLe-2200-16-16: 16 relays, 16 dig. inputs, with ribbon cable for the connection of the digital inputs

APcLe-2200-16-8: 16 relays, 8 dig. inputs, with ribbon cable for the connection of the digital inputs

APcLe-2200-8-8: 8 relays, 8 digital inputs, 24 V

APcLe-2200-16: 16 relays

APcLe-2200-8: 8 relays

Accessories

PX8001: 3-row screw terminal panel for DIN rail

ST370-16: Shielded round cable, 2 m

PX901-ZG: Screw terminal panel for DIN rail