8/16 relays, 8 isolated digital inputs, 24 V

ADDI-DATA®

APCI-2200

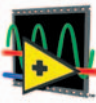**8 or 16 relays output channels**

Switching voltage 60 VDC, 48 VAC, switching current 1 A

8 digital inputs 24 V

Optical isolation

Watchdog

Easy programming

LabVIEW™

LabWindows/CVI™

Features

- PCI Interface to the 32-bit data bus

Relays
- 8 or 16 electromechanical relays with change-over contacts
- Max. switching voltage for the relays: 60 VDC, 48 VAC
- Max. switching capacity: 30 W, max. 1 A
- Short response time
- Watchdog: switched on/off through software

Digital inputs
- 8 inputs, optically isolated
- Input voltage: 12-24 V (DC)

Safety features
- EMC tested
- Watchdog activity can be read back
- Optical isolation of the relays
- Creeping distance IEC 61010-1 (VDE411-1)

EMC tested acc. to 89/336/EEC
- IEC 61326: electrical equipment for measurement, control and laboratory use

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
- ...

Software drivers

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

Standard drivers for:
Linux kernel version 2.4.2, Windows XP/2000/NT/98.
Real-time driver for Windows XP/2000/NT/98.
The board is supplied with the universal software ADDIPACK (see Page 5).

Drivers for the following application software:
LabVIEW 5.01
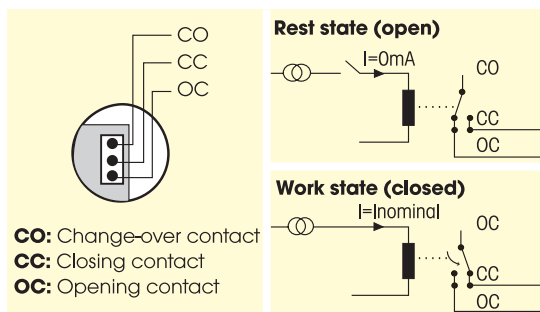LabWindows/CVI

Samples for the following compilers:
Microsoft VC++ 5.0 • Borland C++ 5.01
Visual Basic 5.0 • Delphi 4.0

ADDIPACK functions supported:
Digital input • Digital output • Watchdog

Current driver list on the web: www.addi-data.com

Function principle of the relays

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

Rest state (open)
Work state (closed)

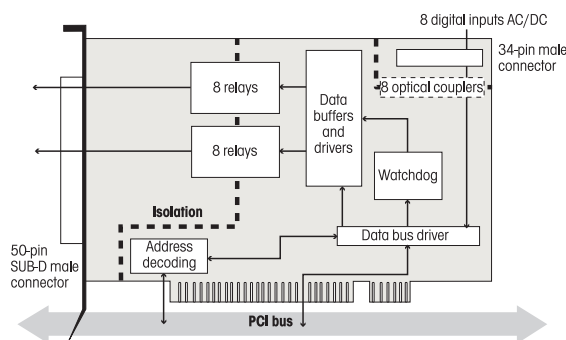## APCI-2200

Specifications

Relays

Type of contacts:	8/16 change-over
Max. switching voltage:	60 VDC, 48 VAC
Max. switching current:	1 A
Max. switching capacity:	30 W
Contact resistance:	< 100 mOhm
Contact material:	Ag+ Au- plated
Responding time:	Max. 5 ms, typ. 2.5 ms
Release time:	Max. 5 ms, typ. 0.9 ms
Mecanical life:	5×10^6 switching operations
Electrical life:	10^5 operations with rated load

Digital inputs

Number of inputs:	8
Optical isolation:	through optical couplers, 1000 V
Nominal voltage:	12-24 V (DC)
Nominal input current at 12 - 24 V (DC):	5-8 mA
Signal delay:	70 µs (at 24 V)
Maximum input frequency:	5 kHz (at 24 V)

Watchdog

Watchdog time:	20 ms to 5s in steps of 20 ms

Safety

Test voltage:	1000 V
Watchdog	

Noise immunity

Test level:	- ESD: 4 kV
	- Fields: 10 V/m
	- Burst: 4 kV
	- Conducted radio interferences: 10 V

Physical and environmental conditions

Dimensions:	131 x 99 mm (PCI-short)
System bus:	PCI 32-bit 5 V acc. to specification 2.2 (PCISIG)
Space required:	PCI-short, 1 PCI slot
Operating voltage:	+5 V, ± 5 % from PC
Current consumption:	550 mA ± 10 % typ. (APCI-2200-16-8)
Front connector:	50-pin SUB-D male connector
Additional connector:	16-pin male connector. APCI-2200-16-8: connection with delivered ribbon cable FB2200-3. Connects the board to a bracket with a 37-pin SUB-D male connector. For connecting the PX 901-ZG.
Temperature range:	0 to 60 °C (with forced cooling)

Screw terminal board PX 8000 with cable ST370-16
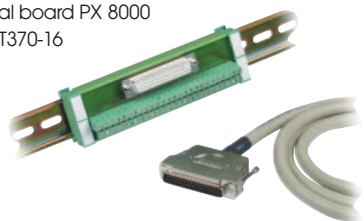
Simplified block diagram

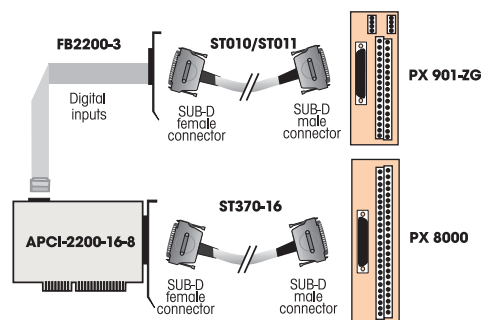### Pin assignment – 50-pin SUB-D male connector - full version

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

ADDI-DATA connection

Example 1: APCI-2200-16-8
- Connection of the relay outputs through screw terminal board PX 8000
- Connection of the digital inputs through ribbon cable to the screw terminal board PX 901-ZG

Example 2: APCI-2200-8-8, APCI-2200-8, APCI-2200-16
Connection of the relay outputs and the digital inputs through the front connector to the screw terminal board
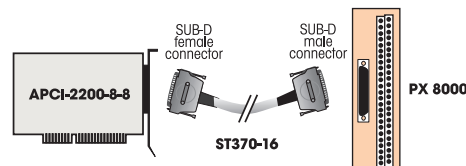
ADDINUM APCI-2200

APCI-2200: 8/16 relays, 8 isolated digital inputs, 24 V. Incl. technical description and software drivers

Versions

APCI-2200-16-8: 16 relays, 8 digital inputs, with ribbon cable for connecting the digital inputs
APCI-2200-8-8: 8 relays, 8 digital inputs, 24 V
APCI-2200-16: 16 relays
APCI-2200-8: 8 relays

Connection

PX 8000: Screw terminal board, 50-pin, for DIN rail
ST370-16: Shielded round cable, 2 m
PX 901-ZG: Screw terminal board for DIN rail