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

APCI-2200-8-8_3,3V

APCI-2200 /APCI-2200-8-8_3,3V

8 or 16 relay output channels

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

8 digital inputs 24 V

Optical isolation

Watchdog

Easy programming

RoHS 2002/95/EC

PCI 32-bit

LabVIEW™

LabWindows/CVI™

Features

- PCI 5 V (APCI-2200)
- PCI 3.3 V (APCI-2200-8-8_3,3V)

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

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 samples is supplied with the board.

Standard drivers for:
Linux Kernel version 2.4.2,
Windows Vista (32-bit)/XP/2000/NT/98.
Real-time drivers for
Windows Vista (32-bit)/XP/2000/NT/98.
The board is supplied with the universal software
ADDIPACK (see page 8).

Drivers for the following software packages:
- LabVIEW 5.01
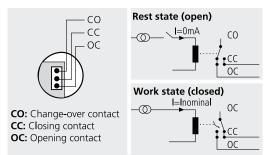- LabWindows/CVI

Samples for the following compilers:
- Microsoft VC++ 5.0
- Borland C++ 5.01
- Visual Basic 5.0
- Delphi 4.0
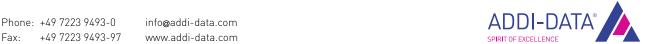
Supported ADDIPACK functions:
- Digital input
- Digital output
- Watchdog

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

Function principle of the relays

CO
CC
OC

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

Rest state (open)
I=0mA
CO
CC
OC

Work state (closed)
I=Inominal
OC
CC
OC

ADDI-DATA®
SPIRIT OF EXCELLENCE

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

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 mΩ
Contact material:	Ag and Au plated
Responding time:	Max. 5 ms, typ. 2.5 ms
Release time:	Max. 5 ms, typ. 0.9 ms
Mechanical life:	5×10^6 operations
Electrical life:	10^5 operations at rated load

Digital inputs

Number of inputs:	8
Optical isolation:	Throug opto-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)
Maximal input frequency:	5 kHz (at 24 V)

Watchdog

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

Safety

Test voltage:	1000 V
Watchdog:	8-bit, programmable, 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.
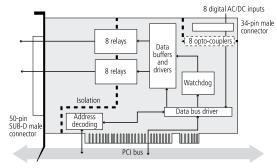
Physical and environmental conditions

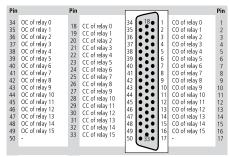|	
Dimensions:	131 x 99 mm (PCI short)
System bus:	PCI 32-bit 5 V acc. to specification 2.1 (PCISIG) or 3.3 V
Space required:	PCI short, 1 PCI slot
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption:	550 mA ± 10 % typ. (APCI-2200-16-8)
Front connector:	50-pin SUB-D male connector
Additional 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 up to 60 °C (with forced cooling)

Screw terminal panel PX 8000 with cable ST370-16

APCI-2200

Simplified block diagram

Pin assignment – 50-pin SUB-D connector APCI-2200-16-8

Pin		Pin				Pin	
34	OC of relay 0	18	CC of relay 0		34	CO of relay 0	1
35	OC of relay 1	19	CC of relay 1		35	CO of relay 1	2
36	OC of relay 2	20	CC of relay 2		36	CO of relay 2	3
37	OC of relay 3	21	CC of relay 3		37	CO of relay 3	4
38	OC of relay 4	22	CC of relay 4		38	CO of relay 4	5
39	OC of relay 5	23	CC of relay 5		39	CO of relay 5	6
40	OC of relay 6	24	CC of relay 6		40	CO of relay 6	7
41	OC of relay 7	25	CC of relay 7		41	CO of relay 7	8
42	OC of relay 8	26	CC of relay 8		42	CO of relay 8	9
43	OC of relay 9	27	CC of relay 9		43	CO of relay 9	10
44	OC of relay 10	28	CC of relay 10		44	CO of relay 10	11
45	OC of relay 11	29	CC of relay 11		45	CO of relay 11	12
46	OC of relay 12	30	CC of relay 12		46	CO of relay 12	13
47	OC of relay 13	31	CC of relay 13		47	CO of relay 13	14
48	OC of relay 14	32	CC of relay 14		48	CO of relay 14	15
49	OC of relay 15	33	CC of relay 15		49	CO of relay 15	16
50	-				50	-	17

OC: Opening contact   CC: Closing contact   CO: Change-over contact
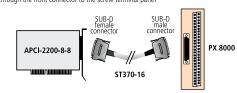
ADDI-DATA connection

Example 1: APCI-2200-16-8
- Connection of the relay outputs through screw terminal panel 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 panel

Ordering information

APCI-2200 / APCI-2200-8-8_3,3V

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

APCI-2200-16-8:	16 relays, 8 dig. inputs, with ribbon cable for the connection of the dig. inputs, PCI 5 V
APCI-2200-8-8:	8 relays, 8 digital inputs, 24 V, PCI 5 V
APCI-2200-8-8_3,3V:	8 relays, 8 digital inputs, 24 V, PCI 3.3 V
APCI-2200-16:	16 relays, PCI 5 V
APCI-2200-8:	8 relays, PCI 5 V

Accessories

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