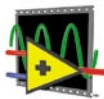
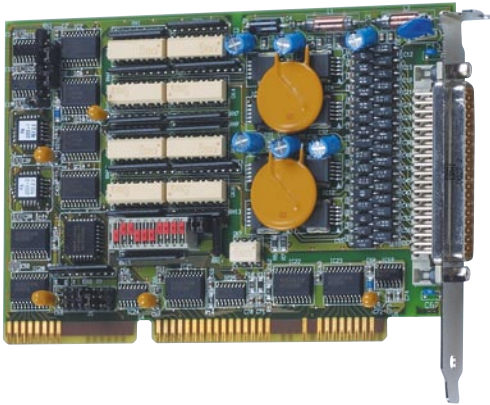


# Digital output board, 32 isolated channels, 24 V



LabVIEW™



LabWindows/CVI™



## Features

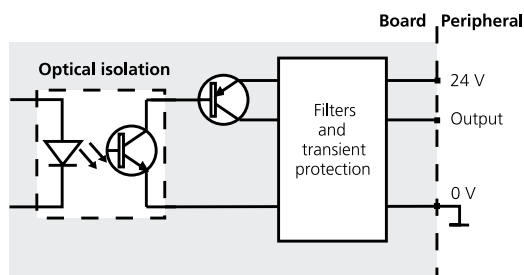
### 32 digital outputs, 24 V, isolated

- Output current: 500 mA
- Voltage range: 10 to 36 V
- Diagnostic reports, readable through status register in case of short-circuit, overtemperature, voltage drop or watchdog
- 3 x 16-bit timer (82C54):
  - Timer as programmable watchdog for the reset of the outputs to "0"
  - Function release through software
  - Control of 2 output channels for generating square-wave signals
- Interrupt triggered through error on the outputs or through timer2
- Addressing through DIP switches
- 16-bit or 8-bit data bus
- After power-on the outputs are reset to "0"

## Safety features

- Optical isolation 1000 V
- Creeping distance IEC 61010-1 (VDE411-1)
- Protection against fast transients (burst), overvoltage, electrostatic discharge and high-frequency EMI
- Maximum output current for 32 output channels: 6 A typ. (2 x 3 A)
- Self resetting fuse (electronic fuse)
- Short-circuit current per output 1.5 A typ.
- Output capacitors minimise electromagnetic emissions
- Fast demagnetization in case of inductive loads
- External 24 V supply screened through a Protective circuitry

## Protective circuitry for the output channels



## PA 2000

32 digital outputs, 24 V, 500 mA/channel

Optical isolation 1000 V

Overvoltage protection

Short-circuit protection

3 timers

Diagnostic report in case of error

Watchdog

## EMC tested acc. to 89/336/EEC

- IEC 61326: electrical equipment for measurement, control and laboratory use

## Applications

- PLC connection
- Industrial digital output control
- Signal switching
- Interface to electromechanical relays
- Automatic test equipment
- Monitoring of motors, lights
- Watchdog timer
- Machine interfacing
- ...

## Software drivers

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

### Standard drivers for:

- Windows 2000/NT/98/95, Windows 3.11, MS-DOS
- Real-time drivers for Windows 2000/NT

### Drivers for the following application software:

- LabVIEW 5.01

### Samples for the following compilers:

- Microsoft VC++ 5.0 • Microsoft C 6.0
- Borland C++ 5.01 • Borland C 3.1
- Visual Basic 5.0 • Visual Basic 1.0
- Delphi 4 • Turbo Pascal 7.0

### On request:

- DiaDem 6/7
- LabWindows/CVI 5.01

Current driver list on the web: [www.addi-data.com](http://www.addi-data.com)

# Digital output board, 32 isolated channels, 24 V

PA 2000

## Specifications

### Digital outputs

Outputs:	32
Output type:	High-side (load at ground) acc. to IEC 1131-2
Optical isolation:	through optical couplers, 1000 V from the PC to the peripheral
Nominal voltage:	24 V
Supply voltage:	10 to 36 V, min. 5 V (shut-down) through front connector
Max. current for 32 outputs:	6 A typ. (2x3 A)
Output current/channel:	500 mA typ./channel
Output current for 16 channels:	200 mA typ./channel
Short-circuit current/ Shut-down at 24 V, Rload < 0.1Ω:	1.5 A
RDS ON resistance:	0.4 Ω max.
Switch-on time:	I out=0.5 A, Load = resistance: 120 μs
Switch-off time:	I out=0.5 A, Load = resistance: 40 μs
Overtemperature (shut-down):	170 °C (output driver)
Temperature hysteresis:	20 °C (output driver)

### Safety

Shut-down logic:	When the ext. 24 V voltage drops below 5 V, the outputs are switched off. Diagnostic: status bit or interrupt to PC
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Counter or timer:	3
Watchdog:	Timer programmable, 2 ms to 65 s

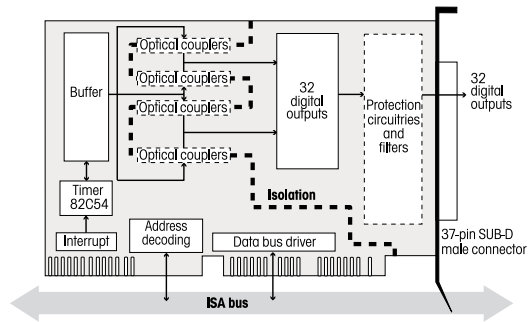
### EMC – Electromagnetic compatibility

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:	156 x 99 mm
System bus:	ISA, XT or AT slot
Place required:	Short board
Operating voltage:	+5 V, ± 5 % from PC / 174 mA
Current consumption:	186 mA ± 10 mA typ.
Front connector:	37-pin SUB-D male connector
Temperature range:	0 to 60 °C (with forced cooling)

## Simplified block diagram

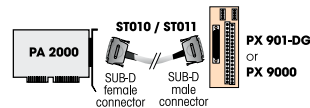


## Pin assignment – 37-pin SUB-D male connector

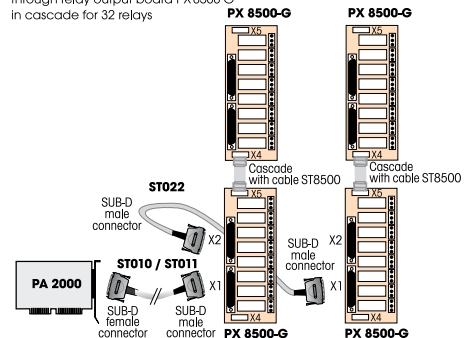
19	Reserve	37	Dig. output 32
18	Dig. output 31	36	Dig. output 30
17	Dig. output 29	35	Dig. output 28
16	Dig. output 27	34	Dig. output 26
15	Dig. output 25	33	Dig. output 24
14	Dig. output 23	32	Dig. output 22
13	Dig. output 21	31	Dig. output 20
12	Dig. output 19	30	Dig. output 18
11	Dig. output 17	29	0 V ext.
10	0 V ext.	28	24 V ext.
9	24 V ext.	27	Dig. output 16
8	Dig. output 15	26	Dig. output 14
7	Dig. output 13	25	Dig. output 12
6	Dig. output 11	24	Dig. output 10
5	Dig. output 9	23	Dig. output 8
4	Dig. output 7	22	Dig. output 6
3	Dig. output 5	21	Dig. output 4
2	Dig. output 3	20	Dig. output 2
1	Dig. output 1		

## ADDI-DATA connection

**Example 1**  
Connection of the outputs through screw terminal boards



**Example 2**  
Connection of the outputs through relay output board PX 8500-G in cascade for 32 relays



Terminal panel PX 9000 and PX 901-DG with cable ST010



## Ordering information

### PA 2000

Digital output board, 32 isolated channels, 24 V. Incl. technical description and software drivers.

### Connection

<b>PX 901-D:</b>	Screw terminal panel, LED status display
<b>PX 901-DG:</b>	Screw terminal panel for DIN rail, LED status display
<b>PX 9000:</b>	3-row screw terminal panel for DIN rail, LED status display
<b>PX 8500-G:</b>	Relay output board for DIN rail, cascadable
<b>ST010:</b>	Standard round cable, shielded, twisted pairs, 2 m
<b>ST011:</b>	Standard round cable, shielded, twisted pairs, 5 m
<b>ST010-S:</b>	Same as ST010, for high currents (24V supply separated)

<b>ST022:</b>	Round cable between two PX 8500, shielded, 2 m
<b>ST8500:</b>	Ribbon cable for cascading two PX 8500