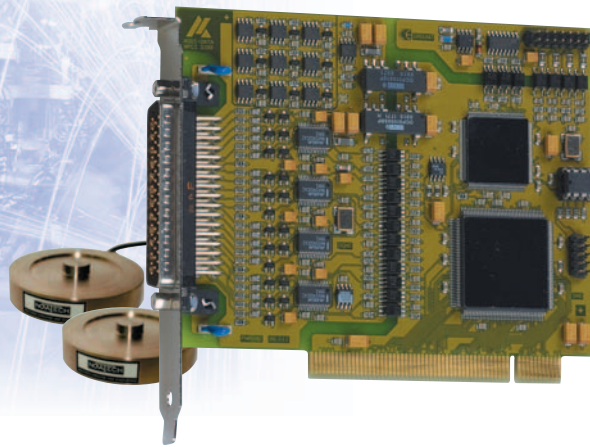


Acquisition of strain gauges, isolated, 18-bit



APCI-3300

**Up to 8 channels for the acquisition
of strain gauges**

Up to 8 onboard voltage sources

18-bit resolution

Optical isolation 1000 V

Software linearisation

**Direct connection of the pressure sensors
with terminal board PX 3200**



LabWindows/CVI™

Features

Analog input channels

- 18-bit resolution, unipolar, 16-bit accuracy
- 8 or 4 differential inputs for strain gauges
- Voltage range 0 to + 2.5 V
- 4 or 8 independent voltage sources for the connected pressure sensors
- Output voltage for the voltage sources: 5 V, 40 mA
- Gain and offset calibration
- Calculation of the pressure value through software
- Programmable gain
- 16-bit accuracy with sample rates of 20, 40, 80 or 160 Hz (higher sample rates on request)

Analog acquisition

- Acquisition triggered through software, timer, external event
- Trigger functions:
 - software trigger or
 - external trigger: the analog acquisition (single channel or scan with or without timer) is started through a signal switching from 0 to 24 V on a digital input channel.
- Connection of linear sensors (Wheatstone bridge)

Digital

- 4 digital input channels, 24 V and 3 digital output channels, open collector, isolated

Safety features

- Optical isolation 1000 V
- Creeping distance IEC 61010-1 (VDE411-1)
- Protection against overvoltage (± 30 V) and high-frequency EMI

EMC tested acc. to 89/336/EEC

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

Software drivers for:

Drivers for Windows XP/2000/NT/98.
Real-time drivers for Windows XP/2000/NT/98.
The board is supplied with ADDIPACK (see Page 5).

Samples for the following compilers:

Microsoft VC++ 5.0 • Borland C++ 5.01
Visual Basic 5.0

ADDIPACK functions supported:

Interrupt • Pressure • Digital input • Digital output

On request:

LabVIEW • LabWindows/CVI • Delphi

measurement of strain gauges, isolated, 18-bit

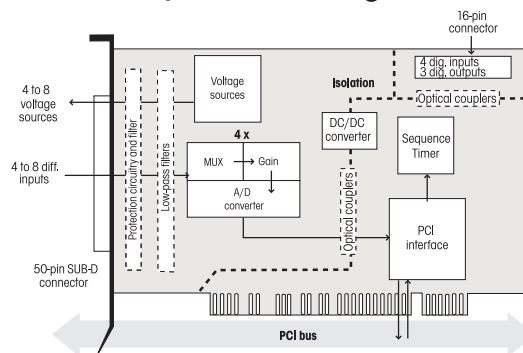


APCI-3300

Specifications

Analog inputs	
Resolution:	18-bit, unipolar
Number of inputs:	8 or 4 analog inputs for strain gauges one voltage source per channel
Input type:	differential channels
Optical isolation:	1000 V through optical couplers from the PC to the peripheral
Precision:	16-bit
Overvoltage protection:	± 30 V
Input voltage range:	0 to 2.5 V/PGA
Input amplifier (PGA):	1, 2, 4, 8, 16, 32, 64, 128
Conversion start:	through software or external trigger, with or without timer
Voltage sources:	4 or 8
Output voltage for the voltage sources:	5 V, 40 mA (other values on request)
Digital I/O	
Number of I/O channels:	4 digital inputs, 24 V, 3 digital outputs, 24 V, 125 mA typ., open collector
Logical "0" level:	0-5 V
Logical "1" level:	12-30 V
Input current at 24 V:	2 mA
Max. switching current of the outputs:	125 mA
Optical isolation:	1000 V through optical couplers for analog and digital channels
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
System bus:	PCI 5 V 32-bit
Place required:	1 PCI slot and 1 slot opening for the digital I/O
Operating voltage:	+5 V, ±5 % from PC
Current consumption (typ.):	570 to 600 mA depending on the board version
Front connector (analog):	50-pin SUB-D male connector
Additional connector :	16-pin male connector for connecting the digital I/O via ribbon cable with 37-pin SUB-D connector
Operating temperature:	0 to 60 °C (with forced cooling)

Simplified block diagram



Pin assignment – 50-pin SUB-D Male connector

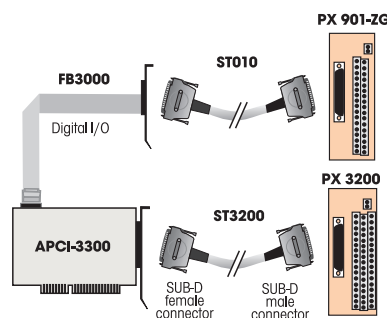
Pin		Pin		Pin		Pin		
34	NC	34	18	1	NC	1	NC	18
35	EXC 0	35	19	2	CH0+	2	NC	19
36	GND 0	36	20	3	CH0-	3	NC	20
37	EXC 1	37	21	4	CH1+	4	NC	21
38	GND 1	38	22	5	CH1-	5	NC	22
39	EXC 2	39	23	6	CH2+	6	NC	23
40	GND 2	40	24	7	CH2-	7	NC	24
41	EXC 3	41	25	8	CH3+	8	NC	25
42	GND 3	42	26	9	CH3-	9	NC	26
43	EXC 4	43	27	10	CH4+	10	NC	27
44	GND 4	44	28	11	CH4-	11	NC	28
45	EXC 5	45	29	12	CH5+	12	NC	29
46	GND 5	46	30	13	CH5-	13	NC	30
47	EXC 6	47	31	14	CH6+	14	NC	31
48	GND 6	48	32	15	CH6-	15	NC	32
49	EXC 7	49	33	16	CH7+	16	NC	33
50	NC	50		17	CH7-	17	NC	

NC: not connected
EXC: Voltage source

Pin assignment – 16-pin male connector

24 V	1	2	GND
Dig. output 0 (+)	3	4	Dig. output 0 (-)
Dig. output 1 (+)	5	6	Dig. output 1 (-)
Dig. output 2 (+)	7	8	Dig. output 2 (-)
Dig. input 0 (+)	9	10	Dig. input 0 (-)
Dig. input 1 (+)	11	12	Dig. input 1 (-)
Dig. input 2 (+)	13	14	Dig. input 2 (-)
Dig. input 3 (+)	15	16	Dig. input 3 (-)

ADDI-DATA connection



ORDERING INFORMATION

ADDIALOG APCI-3300

Acquisition of strain gauges, isolated. Incl. technical description and software drivers

Versions

APCI-3300-4: 4 analog inputs for pressure signals

APCI-3300-8: 8 analog inputs for pressure signals

Connection

PX 3200-G: Terminal board with cold junction compensation and housing for DIN rail.

PX 3200: Terminal board with cold junction compensation and mounting holes.

ST3200: Standard round cable, shielded, twisted pairs, 2 m

FB3000: Ribbon cable for digital I/O on separate bracket

PX 901-ZG: Terminal board for dig. I/O with screw terminals for DIN rail

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

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

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