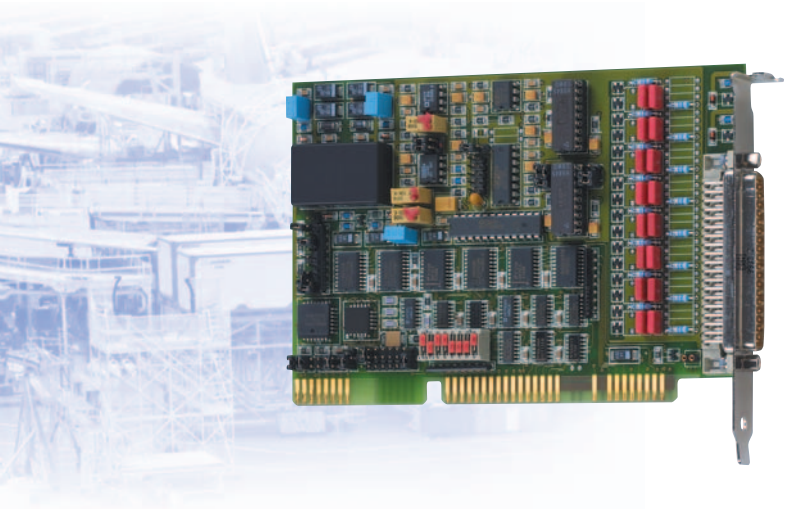
Analog input board, 16 channels, 12-bit



PA 302

16/8 single-ended or 8/4 differential inputs

Voltage or current inputs

12-bit resolution

125 kHz data transfer rate

3 timers

Trigger function

LabVIEW™

LabWindows/CVI™

Features

Analog inputs

- 8 single-ended/4 differential channels or 16 single-ended/8 differential channels
- 12-bit resolution
- Data transfer rate for one channel: 125 kHz
- Input ranges: 0-10 V, ± 10 V, ± 5 V selectable through jumper, 0(4)-20 mA optional (options DC and SC)
- Gain INA (instrumentation amplifier), adjustable through jumper or resistance
- Conversion start through software, external trigger or programmable timer
- Addressing through DIP switches
- Interrupts: IRQ 3, 5, 10, 11, 12, 14, 15
- 3 x 16-bit timer (82C54): Timer 0: only for the analog acquisition Timer 1 and Timer 2: as cyclic time-counters

Analog acquisition

- Acquisition of one single channel, several channels or several channels through scan list
- Automatic analog acquisition through cyclic timer control
- Acquisition through scan list: up to 16 entries with gain, channel, unipolar/bipolar
- Acquisition triggered through software, timer, external event
- Trigger functions:
  - Software trigger or
  - external trigger: the analog acquisition (single or scan) is started through external TTL signal switching from 0 to 5 V at TTL input.
- Interrupt: end of single channel, end of multichannel, end of scan list

Digital

- 2 digital open collector outputs

Safety features

- Protection against overvoltage and high-frequency EMI
- Noise neutralization of the PC voltage supply

EMC tested acc. to 89/336/EEC

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

Applications

- Process control
- Industrial measurement
- Acquisition of sensor data
- Signal analysis
- ...

Software drivers

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

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

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 4.0
Visual Basic 1.0
Turbo Pascal 7.0

On request:
LabWindows/CVI 5.01

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

www.addi-data.com
Sales: +49(0)7223/9493-120
Fax: +49(0)7223/9493-92

Analog input board, 16 channels, 12-bit

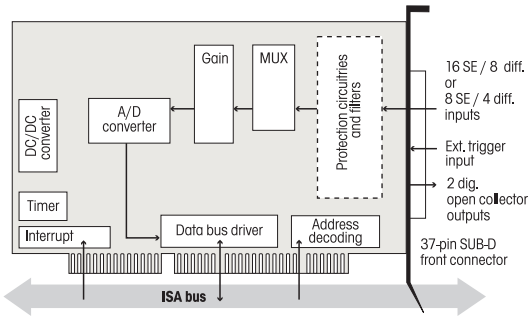
ADDI-DATA®

PA 302

Specifications

Analog inputs	
Number of inputs:	16 single-ended/8 differential or 8 single-ended/4 differential
Resolution:	12-bit
Precision:	± 1 LSB
Max. data transfer rate:	single-ended without INA: 125 kHz
Conversion time:	3 µs
Data transfer:	Data to the PC - through I/O commands - Interrupt at End of Conversion (EOC)
Input range:	0-10 V, ± 10 V, ± 5 V selectable through jumper 0(4)-20 mA optional
Input impedance:	10^{11} Ω
Gain INA:	10, 100, 200, 300, 500, 600, 700, 800 through jumper, (instrumentation amplifier) Intermediate values can be obtained through resistor
Overvoltage protection:	± 12 V
Trigger:	through software, external event or programmable timer
Interrupts:	IRQ 3, 5 for XT , IRQ 10, 11, 12, 14, 15 for AT selectable through jumper
Timer:	3 x 16-bit timer (82C54)
Timer configuration:	
Timer 0:	892.857 kHz selectable through jumper
Timer 1:	freely programmable through jumper
Timer 2:	27.97 kHz selectable through jumper
Acquisition possibilities:	
Timer 0:	Time remaining until the conversion of a single channel starts
Timer 1 and 2:	Cyclic time-counter, with automatic reload function of the programmable counter value after time out. For generating a defined time interval (with interrupt possibility)
Digital	
Number of outputs:	2 digital open collector outputs
Max. output voltage:	24 V
Max. output current:	50 mA typ.
Protection circuitry:	Voltage reversal protection
Noise immunity	
Test level:	- ESD: 4 kV - Fields: 10 V/m - Burst: 4 kV - Conducted radio interferences: 10 V
Physical and environmental conditions	
Dimensions:	156 x 99 mm
System bus:	ISA
Place required:	1 AT (16-bit) or XT (8-bit) slot
Operating voltage:	+5 V, ±5 %
Current consumption:	620 mA typ.
Front connector:	37-pin SUB-D male connector
Temperature range:	0 to 60 °C (with forced cooling)

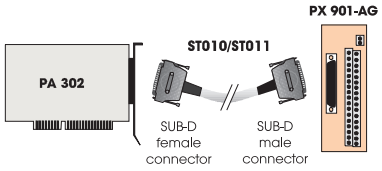
Simplified block diagram



Pin assignment – 37-pin SUB-D male connector

DIFF	SE		SE	DIFF
Logic driver 0	Logic driver 0	19 37	Logic driver 1	Logic driver 1
Analog GND	Analog GND	18 36	Digital GND	Digital GND
Analog GND	Analog GND	17 35	Analog GND	Analog GND
Analog GND	Analog GND	16 34	Analog GND	Analog GND
Analog GND	Analog GND	15 33	Analog GND	Analog GND
Analog GND	Analog GND	14 32	Analog GND	Analog GND
Analog GND	Analog GND	13 31	Analog GND	Analog GND
Analog GND	Analog GND	12 30	Analog GND	Analog GND
Analog GND	Analog GND	11 29	Analog GND	Analog GND
Analog GND	Analog GND	10 28	+ 5 V	+ 5 V
Ext. trigger	Ext. trigger	9 27	(+) An. input 4	(-) An. input 0
(-) An. input 4	(+) An. input 12	8 26	(+) An. input 5	(-) An. input 1
(-) An. input 5	(+) An. input 13	7 25	(+) An. input 6	(-) An. input 2
(-) An. input 6	(+) An. input 14	6 24	(+) An. input 7	(-) An. input 3
(-) An. input 7	(+) An. input 15	5 23	(+) An. input 3	(+) An. input 3
(+) An. input 7	(+) An. input 11	4 22	(+) An. input 2	(+) An. input 2
(+) An. input 6	(+) An. input 10	3 21	(+) An. input 1	(+) An. input 1
(+) An. input 5	(+) An. input 9	2 20	(+) An. input 0	(+) An. input 0
(+) An. input 4	(+) An. input 8	1		

ADDI-DATA connection



Terminal board PX 901-AG with cable ST010

ORDERING INFORMATION

ADDIALOG PA 302

Analog input board, 16 channels, 12-bit. Incl. technical description and software drivers.

Versions

PA 302-16: 16 single-ended or 8 differential inputs
PA 302-8: 8 single-ended or 4 differential inputs

Options

Please specify the number of channels to be supplied with the option.

SF: Filter for 1 single-ended input, 33 Hz
DF: Precision filter for 1 differential input, 30 Hz
DC: Current input for 1 differential input, 0(4)-20 mA
SC: Current input for 1 single-ended input 0(4)-20 mA

Connection

PX 901-A: Terminal board with transorb diodes, for connecting the analog inputs
PX 901-AG: Screw terminal board with housing 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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