Multifunction data acquisition board, isolated, 16-bit

PA 3110

16 single-ended/8 diff. inputs, 16-bit
4/8 analog outputs, 12-bit
Optical isolation 500 V
Automatic analog acquisition
Simultaneous actualisation of the outputs
Reset to definite output level
100 kHz data transfer rate
Onboard FIFO, DMA access

Features

Analog inputs
- 16 single-ended/8 differential or 8 single-ended/4 differential inputs
- Resolution: 16-bit
- Conversion time: 10 µs
- Overvoltage protection ± 20 V
- Input range: 0-10 V, ± 10 V
- Low-pass filter and current inputs as option
- Gain: 1, 2, 5, 10, freely programmable through software for each channel
- 16-bit DMA access for analog data acquisition
- 3 timers: timer 0 and timer 1 only for the analog acquisition, timer 2 for the analog acquisition or as watchdog

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, externals event
- Trigger functions:
  - software trigger or
  - external trigger: the analog acquisition (single or scan) is started through a signal switching from 0 to 24 V on digital input 0.
- Interrupt: end of single channel, end of multichannel, end of scan list

Analog outputs
- 4 or 8 analog outputs
- Resolution: 12-bit
- Reset to definite level
- Watchdog (Timer 2): the analog outputs are reset to “0” after watchdog overflow
- Setting time: typ. 6 µs (0-10 V)
- Simultaneous actualisation of the outputs
- Output voltage range: 0-10 V, ±10 V
- Output current typ. ±5 mA
- Driver for high capacitive loads (500 µF)
- Each output has its own ground line

Safety features
- Optical isolation 500 V
- Noise neutralization of the PC voltage supply

Applications
- Industrial process control
- Industrial measurement
- Automatic test equipment
- Temperature monitoring and control
- Control of chemical processes
- Factory automation
- Acquisition of sensor data
- Laboratory equipment
- Current measurement

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 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 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
Multifunction data acquisition board, isolated, 16-bit

Specifications

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<tr>
<th>Analog inputs</th>
<th>16 single-ended/8 differential or 8 single-ended/4 differential</th>
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<td>Optical isolation</td>
<td>500 V</td>
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<tr>
<td>Resolution</td>
<td>16-bit</td>
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<tr>
<td>Input range</td>
<td>0-10 V, ±10 V adjustable for each channel through software, 0-20 mA optional</td>
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<tr>
<td>Conversion time</td>
<td>10 µs</td>
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<tr>
<td>Gain</td>
<td>Programmable gain (x1, x2, x5, x10)</td>
</tr>
<tr>
<td>Overvoltage protection</td>
<td>±12 V at power-on</td>
</tr>
<tr>
<td>Common mode rejection</td>
<td>DC at 60 Hz, 90 dB minimum</td>
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<tr>
<td>Relative precision (INL)</td>
<td>±4 LSB</td>
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<tr>
<td>Diff. Non-linearity (DNL)</td>
<td>±15-bit</td>
</tr>
<tr>
<td>Input impedance (PGA)</td>
<td>10^12 Ω // 10 nF single-ended, 10^12 Ω // 20 nF differential against GND</td>
</tr>
<tr>
<td>Conversion start</td>
<td>Through software or programmable timer</td>
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</table>

| Timer interrupts | IR5, 6, 7 for XT, IRQ 10, 11, 12, 14, 15 for AT |

<table>
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<th>Analog outputs</th>
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<td>Number of outputs</td>
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<td>Resolution</td>
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<td>Setting time of 2 kΩ, 1000 pF</td>
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<td>Max. output current/load</td>
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<tr>
<td>Integral non-linearity (INL)</td>
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<td>Diff. non-linearity (DNL)</td>
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<th>Noise immunity</th>
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<tr>
<td>Test level</td>
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<tr>
<td>- Fields: 10 V/m</td>
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<tr>
<td>- Burst: 2 kV/4 kV Netz</td>
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<tr>
<td>- Conducted radio interferences: 10 V</td>
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<td>Front connector</td>
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<td>Temperature range</td>
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ADDIALOG PA 3110

Isolated multifunction data acquisition board. Incl. technical description and software drivers.

Versions

- PA 3110-16-4: 16 SE/8 diff. inputs, 4 analog outputs
- PA 3110-16-8: 16 SE/8 diff. inputs, 8 analog outputs
- PA 3110-8-4: 8 SE/4 diff. inputs, 4 analog outputs
- PA 3110-8-8: 8 SE/4 diff. inputs, 8 analog outputs

Options

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

- **Option SF:** Filter for 1 single-ended input
- **Option DF:** Precision filter for 1 differential input
- **Option PC:** Current input 0(4)-20 mA and precision 250 Ω, Tol. 0.01 %, Tk 5; ¼ Ω

- **Option PC-SE:** for 1 single-ended input
- **Option PC-Diff:** for 1 differential input

Connection

- PX 901-A: Screw terminal board with transorb diodes, for connecting the analog inputs
- PX 901-AG: Screw terminal board for DIN rail
- ST010: Standard round cable, shielded, twisted pairs, 2 m
- ST011: Standard round cable, shielded, twisted pairs, 5 m

ADDI-DATA connection

Pin assignment – 37-pin SUB-D male connector

Terminal board PX 901-AG with cable ST010

ORDERING INFORMATION

ADDIALOG PA 3110

www.addi-data.com

Sales: +49 (0) 7223/9493-120
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