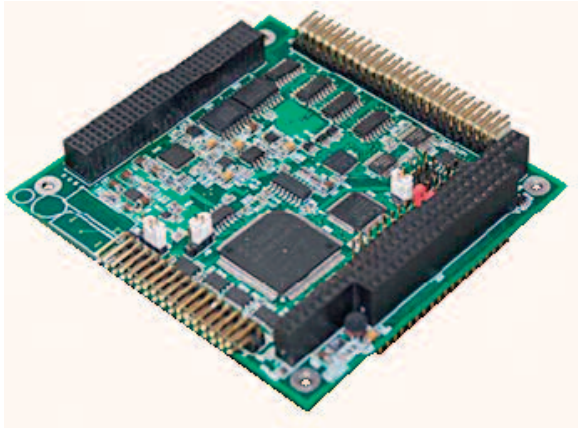


# AIC324

## Analog and Digital I/O Module



### Features

- System controller interface – PC/104 (ISA 16 bit)
- Pass through PCI Bus
- 32 analog inputs; ADC 16 bit; 250 kHz;  $\pm 10\text{ V} \dots \pm 0.625\text{ V}$
- 4 analog outputs; DAC 16 bit; 6 s;  $\pm 10\text{ V} \dots \pm 2.5\text{ V}$
- 24 digital input/output channels; 3.3 V or 5 V CMOS; support for 16bit and 32bit counters; electrostatic protection of outputs
- Analog/digital isolation: 1000 V
- OS support: FreeDOS, Linux 2.6, QNX6, Windows XP
- MTBF: no less than 1000,000 hours

### Overview

16-bit Analog and Digital I/O Module with galvanic isolation is designed in PC104 standard.

### Technical Specification

#### Interface

- 32 single-wire or 16 differential voltage or current input channels with group galvanic isolation;
- Single-wire, differential or mixed connection of input signals;
- 16-bit digital-analog converter;
- AD converter conversion time 4  $\mu\text{s}$ /channel;
- Input voltage range  $\pm 10\text{ V} \dots \pm 0.625\text{ V}$ ;
- Input current range: 0-20, 0-10, 0-5 mA;
- Programmable input signal gains: 1,2,4,8,16;
- Input resistance:  $>1\text{ M}\Omega$  (voltage); 249  $\Omega$  (current);
- Programmable autocalibration of input signal measurement ranges;
- Programmable auto scanning of inputs;
- FIFO buffer for 2,048 words;
- Individual overvoltage protection of channels  $\pm 40\text{ V}$  (DC).

#### Analog output

- 4 single-wire voltage output channels with group galvanic isolation;
- 16-bit digital-analog converter;
- DAC establishment time 6  $\mu\text{s}$ ;
- Programmable selection of output signals conversion range:  $\pm 10\text{ V}, \pm 5\text{ V}, \pm 2.5\text{ V}, 0-10\text{ V}, 0-5\text{ V}$ ;
- Programmable autocalibration of output signal conversion ranges;
- FIFO buffer for 2,048 words;
- Operation in signal generator mode;
- Individual protection of channels from static electricity (ESD).

#### Digital Input/Output

- 24 + 6 + 7 TTL/CMOS level compatible input/output channels;
- 7 galvanically isolated channels;
- Digital inputs/outputs configuration compatibility with 8255 (Mode 0 and mode 1 channel A);
- Group pull-down or pull-up of discrete outputs;
- 8254 type timer available.

#### Additional features

- Automatic installation of calibrated ADC and DAC ranges when powered on;
- Built-in current measurement transistors with "floating" ground;
- 16/32 bit timer (8254 type), ADC start enabled;
- External ADC bit synchronization capability;
- Synchronous operation of ADCs on several boards capability;
- 16-digit timer for forming signals analogous to 8254;
- 10 shared hardware interrupt lines;
- 2 shared DMA channel request lines.

#### System bus

- 8/16-bit ISA bus;
- PC104+ feedthrough connector.

#### Module power supply

- Direct current power supply voltage:  $\pm 5\text{ B} \pm 5\%$ ;
- Current consumption (without external devices): 600mA;
- Insulation voltage: 1000 V.

#### Mechanical characteristics

- Vibration resistance, acceleration amplitude – 10 g, within the frequency range of 5 ... 2000 Hz, IEC 60068-2-6;
- Single shock resistance, peak acceleration – 150 g, IEC 60068-2-27;
- Multiple shock resistance, peak acceleration – 50 g, IEC 60068-2-29.

#### Operating conditions

- Operating temperatures range:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ;
- Relative humidity: up to 95% at  $+25^{\circ}\text{C}$ .

#### Conformal coating

#### OS support

- FreeDOS;
- Linux 2.6;
- QNX6;
- Windows XP.

#### Weight

No more than 0.12 kg.

#### Dimensions

105.2 x 96 x 23.3 mm.

#### Storage temperature

$-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

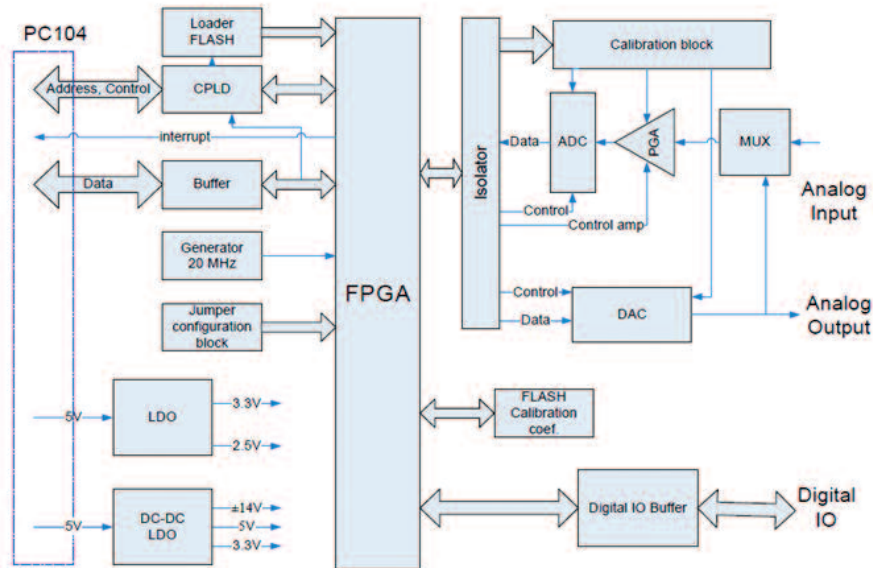
#### MTBF

No less than 100,000 hours.

# AIC324

## Analog and Digital I/O Module

### Block Diagram



### Ordering Information

#### AIC324 Analog and Digital I/O Module Configurations

**AIC324-01 – AIC324 analog and digital input/output module.**

#### Delivery checklist:

1. AIC324 Analog and Digital I/O Module.
2. Antistatic package (bag).
3. Consumer package (cardboard box).

### Corporate Offices

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Product specifications are subject to change without notice