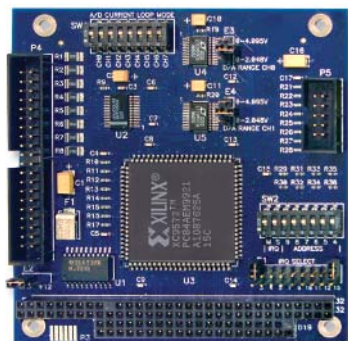# SPECIFICATIONS

MiniModule™ A2D

Versatile PC/104 expansion modules feature A/D and D/A
circuitry to bring analog I/O to your embedded system

FEATURES

- (8) single-ended 12-bit A/D inputs
- Input range of 0-5V, 0-10V, +/-5V, or +/-10V, software-selectable
- 4-20mA current loop measurement, hardware-configurable
- (2) 12-bit D/A outputs on some models
- 2.048V or 4.095V output full scale
- (16) TTL general-purpose I/Os (GPIOs) on some models
- QuickStart Kits include board, cables, drivers, and documentation

I/O

- Eight Analog Inputs –
  - Single-ended 12-bit A/D inputs
  - Maxim MAX197 successive approximation chip
  - 0-5V, 0-10V, +/-5V, or +/-10V range, software-selectable
  - 4-20mA current loop measurement, hardware-configurable
  - 21 kOhm input impedance
  - 5MHz bandwidth track/hold
  - 100k samples per second
  - Non-linearity +/-1LSB
  - Gain temperature coefficient 5ppm/0°C
- Two Analog Outputs –
  - 12-bit D/A outputs
  - LTC1450 D/A chip
  - 2.048V or 4.095V ranges, selectable
  - 120 Ohm output impedance
- Sixteen GPIOs –
  - CMOS levels 0-5V
  - 24mA source/sink
  - Individually configurable as in or out

Bus Interface
- PC/104 bus (ISA)

Mechanical
- Size – 90x96mm (3.6x3.8") PC/104
- Power – (typical) 0.15A @ +5V
- Environmental – Operating temperature: 0° to 70°C standard

Warranty
- Lifetime warranty

Based on Maxim's MAX197 successive-approximation analog-to-digital chip, the MiniModule™ A2D products provide configurable analog inputs and outputs to extend the capabilities of PC/104-compatible CPUs and single board computers (SBCs) to meet the needs of a variety of applications.

The MiniModule A2D provides (8) single-ended 12-bit A/D inputs with a software-selectable range of 0-5V, 0-10V, +/-5V, and +/-10V. In addition, these inputs can be hardware-configured to measure 4-20mA current loops, which are common in industrial applications.

Some configurations of the MiniModule A2D also provide (2) 12-bit D/A output channels that are jumper-selectable for 2.048V or 4.095V full scale, as well as 16 TTL general-purpose I/O ports that are individually programmable as input or output under software control.

Typical uses of analog circuitry include data acquisition, industrial control, test and measurement, demodulation, and waveform generation. The rugged PC/104 implementation ensures reliable operation in demanding and harsh environments and the MiniModule A2D comes with a lifetime warranty. Ampro's QuickStart Kits provide a convenient development package with the I/O cables, documentation, and software support using Win32 library calls or ActiveX.

The MiniModule A2D fully complies with the industry-standard PC/104 Specification, making it a natural choice for system OEMs who need a drop-in expansion for their new or existing PC/104 or EBX CPUs and SBCs. For your next design, choose MiniModule A2D from Ampro, the inventor of the PC/104 and EBX standards.

ORDERING INFORMATION

MODEL	DESCRIPTION
MM2-A2D-K11	QuickStart Kit, (Q-01 board, cables, documentation, software)
MM2-A2D-Q-01	8 analog in, 2 analog out, 16 GPIO
MM2-A2D-Q-02	8 analog in

www.ampro.com

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