PCI-1241
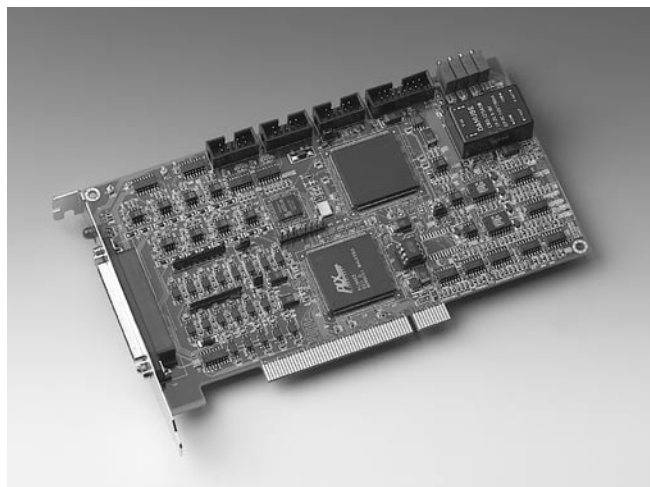
4-axis Voltage-type Servo Motor Control Card

Features

- PCI Bus interface
- 4-axis servo positioning control
- 5-channel encoder input
- 4 channel 16-bit D/A Converters
- 13 dedicated input and 5 dedicated output
- 6 channel 12-bit A/D converter (Optional)
- 256 remote serial input/ output interfaces

FCC C E

Introduction

PCI-1241 uses an ASIC for 4-axis servo positioning and synchronized control with a DDA (Digital Differential Analyzer) to evenly move each axis. Closed-Loop control is implemented with P control, and -10 to +10 V signals are used for outputs to the speed type servo motor driver. It can be applied to multi-axis precision servo control, and it can also read back motor encoder values via its encoder input port to allow stepping motor control. In the control of each axis, there is a set of sensor input points, including: home points, plus limit points and minus limit points. Furthermore, there are inhibit signal output points, position ready output points and an emergency stop input point. It can be expanded up to 128 points input and 128 points output. Additionally, the board reserves a set of 6-channel A/D conversion.

Specifications

V-Command Motion Control

- **Motor Driver Support**   Voltage-type servo
- **Number of Axes**   4
- **Interpolation**   3-axis linear, 2-axis circular, helical
- **Voltage Output Range**   ±10 V
- **Resolution**   16 bits
- **Channels**   4
- **Position Counter**   ± 2,146,483,647
- **Home Modes**   14
- **Velocity Profiles**   T-curve, S-curve
- **Local I/O**
  Machine Interfaces: PEL x 4, MEL x 1, ORG x 4, EMG x 1
  Servo Driver Interfaces: SVON x 4, PRDY x 1
  Manual Pulse Generator Input: 1 set
  Remote I/O Port   2

Isolated Digital Input

- **Input Voltage**   Logic 0: 1 V max.
  Logic 1: 18 V (30 V max.)
- **Isolation Protection** $2,500 \, V_{RMS}$
- **Opto-Isolator Response** 50 ms
- **Input Resistance**   5.4 kΩ @ 18 V

Isolated Digital Output

- **Output Type**   Sink (NPN) (open collector Darlington transistors)
- **Isolation Protection** $2,500 \, V_{RMS}$
- **Output Voltage**   5 ~ 40 V_{DC}
- **Sink Current**   100 mA max./channel; 500 mA max.

Encoder Interface

- **Input Type**   Quadrature (A/B phase) or Up/Down
- **Counts per Enc. Cycle**   0x, 1x, 2x, 4x (AB phase only)
- **Input Range**   10~30 V_{DC}
- **Isolation Protection** $2,500 \, V_{DC}$
- **Max. Input Frequency**   2 MHz

General

- **Bus Type**   PCI V2.2
- **Certifications**   CE, FCC class A
- **Connectors**   3 x 10-pin box head, 1 x 16-pin box head, 1 x SCSI 68-pin female
- **Dimensions**   174 x 107 mm (6.85" x 4.2")
- **Power Consumption**   Typical: 5 V @ 850 mA
  Max: 5 V @ 1 A
- **Humidity**   5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)

Ordering Information

- **PCI-1241**   4-axis Voltage-type Servo Motor Control Card
- **PCL-10168**   68-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction, 1 and 2m
- **ADAM-3968**   68-pin SCSI-II Wiring Terminal Board for DIN-rail mounting
- **ADAM-3941**   Wiring terminal for PCI-1241/1242 with LEDs
- **PCLD-8241**   64 DI/64 DO Remote IO Board