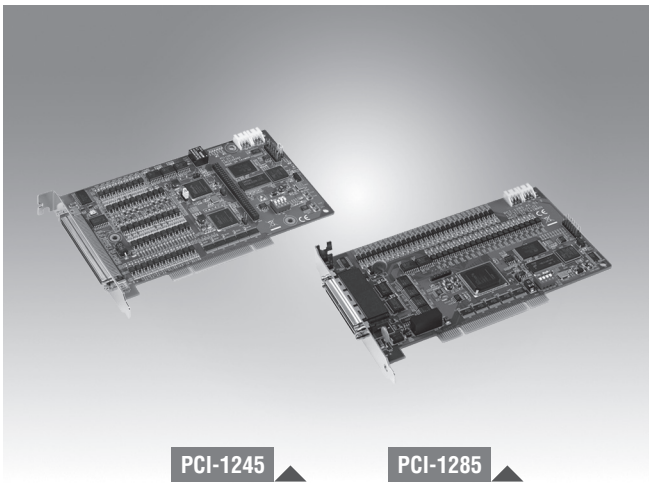
PCI-1245
PCI-1285

DSP-Based 4/8-Axis Stepping and Servo Motor Control Universal PCI Card



Features

- Encoder input is 10 MHz for 4xAB mode, 2.5 MHz for CW/CCW mode
- Pulse output up to 5 Mpps
- Memory buffer (up to 10K points) for trajectory planning which is designed in DSP
- Supports E-Gear, and helical interpolation
- Supports E-CAM providing 256 points to describe the CAM profiles which buffers located in DSP
- Hardware emergency input
- Watchdog timer
- Position latch
- Position compare triggering up to 100 KHz, and memory buffer is up to 100 K points in DSP
- Programmable interrupt
- Supports gantry mode by semi-closed loop pulse train control
- RDY/LTC-dedicated input channels & SVON/CMP/CAM-DO/ERC-dedicated output channels are switchable for general input and output purposes

Introduction

PCI-1245/85 is a 4/6/8-axis universal PCI (supporting both 3.3 V and 5 V signal slot) stepping/pulse-type servo motor control card designed for applications which need to control interpolation, synchronization among multiple axes, continuous contouring, and high speed triggering. PCI-1245/85 utilizes high-performance DSP and FPGA to calculate motion trajectories, synchronization timing control for multiple axes, and input/output handling to offer functionality, such as up to 4/6 -axis linear interpolation, 2- axis circular interpolation, helical interpolation, T/S-curve acceleration/deceleration rates and so on. In addition, Advantech supplies a Common Motion API library, graphical utility, and user-friendly examples to help decrease programming workloads.

Specifications

Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** PCI-1245: 4
PCI-1285: 8
- **Interpolation** Linear, 2/3-axis circular interpolation, 3-axis helical interpolation
- **Max. Output Speed** 5 Mpps
- **Step Count Range** ±2, 147, 483, 646
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type) or CW/CCW (2-pulse type)
- **Position Counters** Range of command and actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O**

  Machine Interfaces: LMT+, LMT-, ORG
  Servo Driver Interfaces: ALM, INP
  Position Compare I/O: CMP
  General Digital I/O: PCI-1245:16-ch DI, 16-ch DO (RDY/LTC pin can be switchable to general-purpose input and CAM-DO/ CMP/SVON/ ERC pin to general-purpose output)
  PCI-1285: 32-ch DI, 32-ch DO (RDY/LTC pin can be switchable to general-purpose input and CAM-DO/ CMP/SVON/ ERC pin to general-purpose output)

Encoder Interface

- **Input Type** Quadrature (A/B phase) or up/down
- **Counts per Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 0~10V
- **Isolation Protection** 2,500 V_{DC}
- **Max. Input Frequency** 10 MHz under 4xAB mode

General

- **Bus Type** Universal PCI V2.2
- **Connectors** PCI-1245: 1 x 100-pin SCSI female connector
PCI-1285: 2 x 100-pin mini-SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** PCI-1245:
Typical: 5 V @ 850 mA
Max.: 5 V @ 1 A
PCI-1285:
Typical: 5 V @ 300 mA
3.3 V @ 1.2 A
Max.: 5 V @ 400 mA
3.3 V @ 1.5 A
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 60068-2-3)
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)

Ordering Information

- **PCI-1245-AE** 4-axis Stepping/Servo Control Universal PCI Card
- **PCI-1285-AE** 8-axis Stepping/Servo Control Universal PCI Card

Accessories

- **ADAM-3956-BE** 100-pin DIN-rail SCSI 4-axis Motion Wiring Board
- **ADAM-3955-AE** 50-pin DIN-rail SCSI 2-axis Motion Wiring Board
- **ADAM-3952-AE** 50-pin DIN-rail SCSI and Box Header Board
- **PCL-101100M-1E/2E/3E** 100-pin SCSI Cable, 1m/2m/3m (for PCI-1245)
- **PCL-10251-1E/2E/3E** 100-pin SCSI to Two 50-pin SCSI Cable, 1m/2m/3m (for PCI-1245 only)
- **PCL-101100SB-2E/3E** Mini-SCSI-100 Shielded Cable, 2m/3m (for PCI-1285)
- **PCL-20153PA5-S2E** 50-pin Cable to Panasonic A4/A5 Servo, 2 m
- **PCL-20153YS5-S2E** 50-pin Cable to Yaskawa Sigma V/7 Servo, 2 m
- **PCL-20153MJ3-S2E** 50-pin Cable to Mitsubishi J3/J4 Servo, 2 m
- **PCL-20153DA2-S2E** 50-pin Cable to Delta A2 Servo, 2 m