



### Features

- 1.0 MHz max. quadrature input rate
- Three 24-bit counters (can cascade up to 48 bits)
- Optically isolated up to 2500 V<sub>RMS</sub>
- 4-stage digital filter
- 2.4 MHz max. input pulse rate
- Pulse/direction and up/down counting
- Digital input with interrupt for each axis
- Programmable time-interval interrupt
- Half-size AT bus card

### Introduction

The PCL-833 is a three-axis quadrature encoder and counter add-on card for the IBM PC/AT and compatibles (ISA bus). This card lets your PC perform position monitoring for motion control systems.

#### Encoder Interface

Each input includes a decoding circuit for incremental quadrature encoding. Inputs accept either single-ended or differential signals. Quadrature input works with or without an index, allowing linear or rotary encoder feedback.

#### Counters

The PCL-833 has three independent 24-bit counters. The maximum quadrature input rate is 1.0 MHz, and the maximum input rate in counter mode is 2.4 MHz. You can individually configure each counter for quadrature decoding, pulse/direction counting or up/down counting.

#### Digital Input and Interrupts

The PCL-833 provides five digital input channels. Each channel accepts digital input as an index input for a rotary encoder or as a home sensor input for a linear encoder.

The card can generate an interrupt to the system based on a signal from its digital inputs, overflow/underflow of its counters, or on a programmed time interval. It can repeatedly generate interrupts at any time interval you specify, from 0.1 msec. to 255 sec. These interrupts let you precisely monitor the speed of a control system.

### Specifications

#### Encoder Input

- **Number of Axes:** 3, independent
- **Max. quadrature input frequency:** 1.0 MHz
- **Max. input pulse frequency:** 2.4 MHz

- **Counts per encoder cycle:** x1, x2, x4 (S/W selectable)
- **Encoder type:** Single-ended or differential
- **Counter size:** 24 bits, easily daisychains for up to 48 bits
- **Counter modes:**  
Quadrature, up/down, pulse/direction (S/W selectable)
- **Digital filter:** 4 stage
- **Sample clock frequency:** 8, 4 or 2 MHz (S/W selectable)
- **Input isolation:** 2500 V<sub>RMS</sub> using optical isolators

#### Digital Input

- **Number of channels:** Five digital, with interrupt
- **Input isolation:** 2500 V<sub>RMS</sub> using optical isolators

#### Programmable Interrupt Controller

1 Hz, 10 Hz, 1 kHz or 10 kHz time base (S/W selected) with a programmable multiplier of 1, 2, 3, 4, ..., 255

#### General

- **Operating temperature:** 0 ~ +60° C (32 ~ 140° F)
- **Storage temperature:** -20 ~ +70° C (-4 ~ 158° F)
- **Operating humidity:** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **Connector:** DB-25 female connector
- **Dimensions:** 185 mm (L) x 100 mm (H) (7.3" x 3.9")

### Ordering Information

- **PCL-833:** 3-axis quadrature encoder and counter card and user's manual
- **ADAM-3925:** DB-25 wiring terminal for DIN-rail mounting
- **PCLS-OCX:** ActiveX control for data acquisition and control