# 4 Axis Encoder Interface Card Model: EIC-325/PCI

## For IBM PC (PCI Bus)

The EIC-325 — a half-size PC card — was designed to accommodate the most popular industry standard optical encoders available in the market. It supports encoders with either **Square-wave** or **Sinus** output. As with all of our other PC add-on products, it was designed for industrial purposes and the most requested features are built on the board.
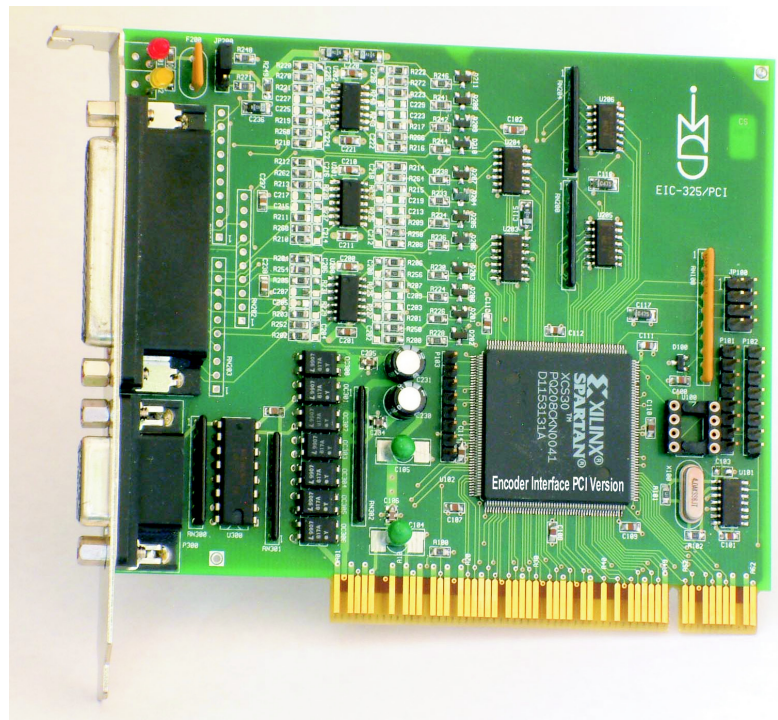


## Main Features:

- Four 24 bit up/down latch counters
- Each counter has a programmable set point value
- 1 Marker/Index/Home/Zero inputs per channel + 11 General Inputs
- 1 Opto-isolated output per channel + 3 general opto-isolated outputs
- Provides the excitation to the encoders
- Single ended or differential inputs, **Sinus** or **Square wave** encoder signals
- PCI bus for PC
- Driver for WIN98,WIN2000,NT + detailed examples in VB and Visual C

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## Introduction

The 4 Axis Encoder Interface Card was designed to accommodate most of the popular optical encoders available in the market, such as Dr. HEIDENHAIM®, RENISHAW®, HP®, and others.

The board supports either **Square-wave** or **Sinus** output encoders, both linear and rotary types.

It can be directly connected to up to 4 encoders and will also provide necessary excitation to the encoders.

The card is equipped with four differential inputs for limit or home switches / marker / encoder index, etc., and 11 more for general use. Also there are four opto-isolated outputs that may be used for set-points, carry, marker, etc., and three outputs for general use.

## Main Features

- Four 24 bit up/down latch counters.
- Each counter can be programmable for preset value.
- Four opto-isolated outputs which can be used for set-points, carry or index/marker and three outputs for general use.
- Four differential inputs for connection of encoder's Index or limit switches and 11 single ended inputs for general use.
- Internal status register for rapid storing and clearing signals.
- **Same board fits Square-wave or Sinus encoders.**

## Specifications

- Number of encoders: 4 per board.
- Multiple encoder pulses: 1, 2 or 4 (software selectable)
- Encoder type: **Sinus** or **Square wave** types.
- Counters size: 24 bit up/down with latched buffer
- Method of communication with PC bus: I/O ports
- Inputs / Outputs: All encoder Inputs (4xSinus, 4xCosine and 4xIndex) are differential.
- All general purpose inputs are TTL/CMOS compatible Schmidt trigger single ended.
- All outputs are opto-isolated.

## Encoder Signals Specifications

- Square wave signal
  - Square wave A phase and B phase shifted by 90°, single-ended or differential
  - HTL 0.5-5v or TTL compatible
  - Maximum input rate 500 Kpps
- Sinus wave signal
  - Two incremental sinusoidal signals (Phase A and B Shifted by 90°).
- Signal range (Encoder output impedence: <1KΩ)
  - Current output encoders: >±100 µA
  - Voltage output encoders: >±100 mV for Phases A,B and for the reference marker / index pulse.
- Excitation to the encoders: 5Vdc.
- Light source current: max. 900 mA total. Protected by a polyswitch resetable fuse.
  - Maximum input rate 500 Kpps

## Encoder Counter Features

- 24 bit up/down counter + 24 bit latched buffer per counter.
- Independent programmable set-point for each counter
- User may freeze the buffers without stopping the counters from counting.
- Independent operation mode for each axis
  - Single / multiple encoder pulses
  - Reset counter when index reached / by software
- Independent selectable output options for each encoder:
  - Set-point reached
  - Counter carry flag
  - Index/Marker

## General

- Power: (All supplied from PCI bus)
  - +5V: 200mA max
  - +12V: 100mA max
  - -12V:  50mA max
- Connectors
  - Encoders: Mini DIP 44 pin
  - Outputs: DIP 9 pin
  - PCI edge connector.
- Environmental
  - Operating temperature: 0-50° C (32-122° F)
  - Humidity: up to 80% non-condensing
- Board dimensions
  Half size PC card
- Software included
  - A package to utilize the PC as a 4-axis sophisticated counter
  - Examples and source code on how to communicate with the board under DOS and drivers for WIN98 WIN2K, NT + example in VB and C

  - Constantly updated on our web page.

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