PCI-8134

4-Axis Stepper & Servo Motion Control Card

Features

- 32-bit PCI bus, plug & play
- Pulse output rate up to 2.4 MHz
- Pulse output options: OUT/DIR, CW/CCW
- 2 axes linear interpolation
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profiles
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors
- 28-bit up/down counter for incremental encoder
- All digital input or output signals are 2500 VRMS isolated
- Change speed on-the-fly
- Simultaneously start/stop on multiple axes
- Dedicated I/O interface for limit switches, home switch, index signal, INP, ERC, ALM
- Programmable interrupt conditions
- Manual pulser input interface
- Support up to 12 cards in one system

Introduction

PCI Interface
The PCI-8134 is 4 axes motion control cards based on PCI bus. The PCI interface provides plug-and-play feature that is the key to easy maintenance. The maximum number of cards in one system is 12 cards with capability of controlling 48 motors.

Motion Control Principle
The PCI-8134 can generate high frequency pulse train. The frequency of the pulse train controls the motor speed; the number of pulse controls the motor position. The differential input/output signals reduce noise interference. The command output options, including DIR/OUT mode and CW/CCW mode, provide an easy access to various stepper or servo motor drivers.

Velocity Profile
The motion control ASIC performs versatile trajectory planning ability. The acceleration and deceleration time are programmable. The S-curve helps to avoid mechanism vibration. The hardware linear interpolation between two axes is powerful to reduce software computation effort.

Operation Modes
Various operation modes are available, such as continuous motion, absolute move, relative move, manual pulser mode, simultaneous move, change speed on the fly, linear interpolation, and home return.

Encoder Interface
Incremental encoder interface is used for position feedback. The encoder counters provides the position information to correct the position error generated by inaccurate mechanical transmissions. The differential-type encoder feedback avoids noise interference. The 28-bit counters cover the position range for most applications.

Mechanism Interface
The pre-defined limit switch sensors on table are widely used to protect the mechanism. The dedicated I/O interface for end-limit, slow-down point, and origin is very useful for system integration.

Servo Drive Interface & GPIO
Some servo motor drivers provide interfacing signals such as in-position (INP), alarm (ALM), error counter clear (ERC), and servo ready signals. These signal interfaces are supported.

Pulser Interface
The handle-wheel pulser is widely used in NC machine. Four pulser interfaces are available through the CN3 connector (10-pin).

Interrupt Events
Many hardware status can be used as interrupt events, such as limit switch, alarm, moving home ready, one movement finished, and so on.

Application

- Electric Assembly
- Semiconductor, LCD Manufacturing and Measurement
- Laboratory Automation
- Vision & Photocomposition Automation
- Biotech Sampling and Handling

Software Support

Windows DLL
The software drivers support VC++/VB programming on Windows 95/98/NT/2000/XP platform with DLL.

LabVIEW VIs
The motion VIs of PCI-8134 for LabVIEW is now available.

IEC-61131-3 Software PLC Standard
The ISaGRAF "C-function library" for PCI-8134 is ready.

MotionCreator™
MotionCreator™ (VB utility) assists the motion MotionCreator™ (VB utility) assists the motion system developer to debug any cabling problem, and solve the difficulty of system configuration before programming.