



## PISO-PS410

PCI Bus, High-speed  
4-axis Motion Control Card  
with FRnet Master

### Introduction

The **PISO-PS410** is a 4-axis stepping/pulse-type servo motor control card that can be used on any IPC with a 5 V or 3.3 V PCI bus, and is suitable for general-purpose motion control applications. This card equipped with one FRnet Master which allows the fast remote I/O of the IPC to be expanded easily. The two-wired FRnet interface allows a maximum 128 DI and 128 DO channels, which are automatically scanned within a period of 0.72 ms.

In addition to its wide speed range, this intelligent motion controller also has a variety of motion control functions built in, such as 2/3-axis linear interpolation, 2-axis circular interpolation, T/S-curve acceleration/deceleration, numerous synchronous actions, automatic homing, and others. A major advantage is that the majority of the PISO-PS410 motion control functions are performed by the high-performance motion ASIC with little load on the processor. The motion status, FRnet I/O, and the other I/O cards on the IPC can still be monitored while driving the motors.

As the low CPU loading requirements of the PISO-PS410 is minimal, one or more motion cards can be used with a single IPC. ICP DAS also provides a variety of functions and examples that can be used to reduce the need for additional programming, making it a highly cost-effective solution for motion control application developers.

### Specifications

Model	PISO-PS410
<b>General</b>	
Number of Axes	4
Slot Interface	Universal PCI Bus
Pulse Output Rate	4 MHz (Max.)
Command Type	Pulse Command
Resolution	32-bit
Pulse Output Mode	CW/CCW, PULSE/DIR
Operation Mode	Semi-closed Loop
Linear Interpolation	Any 2 to 3 of 4 axes
Circular Interpolation	Any 2 axes
Speed Curve Profile	T/S-curve
Synchronous Action	10 activation factors and 14 actions
Ring Counter Mode	32-bit
Position Control Mode	Incremental mode and Absolute mode
Position Compare Trigger	4 MHz
Encoder Interface	A/B pulse, Up/Down
Encoder Counter	32-bit

### Features

- Independent 4-axis motion control
- Support for hand wheel and jog functions
- 4-step home modes with auto-searching
- 2/3-axis linear interpolation function
- 2-axis circular interpolation function
- Programmable T/S-curve acceleration and deceleration
- Programmable ring counter
- Alarm reset and error counter clear output (ERC)
- High-speed auto incremental and auto reloadable output (CMP)
- Expandable remote I/O: 128 DI and 128 DO via a two-wire FRnet interface.

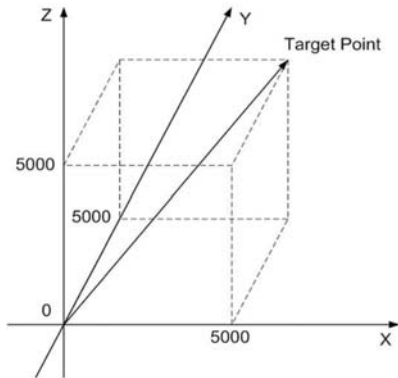


### Software Support

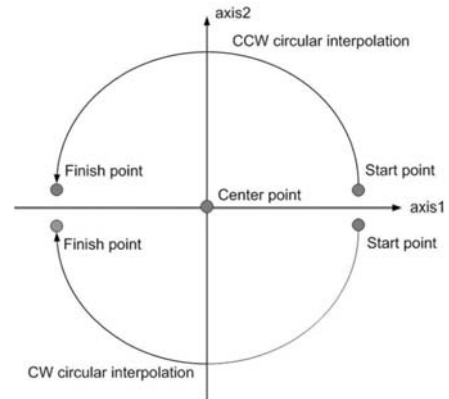
Windows Driver/DLL/Lib	Windows 7 32/64-bit Windows XP/2000 32-bit
DOS Library	-
Labview Development Kit	-
Linux Library	-

Model	PISO-PS410
Encoder Counting Rate	4 MHz
I/O Isolation	2500 Vrms optical isolation
Connector	100-pin SCSI-II
<b>Motion Relative I/O</b>	
Mechanical Switch Input	Home, LMT+/-, NHOME, EMG
Servo I/O Interface	Input : INP, ALM Output: SVON, ALM_RST, ERC
<b>Digital Input</b>	
Digital Input Channels	Local: 4 DI Expandable: 128 DI
<b>Digital Output</b>	
Digital Output Channels	Local: 4 DO Expandable: 128 DO
<b>Power</b>	
Power Consumption	+5 V @ 500 mA
<b>Environmental</b>	
Operating Temperature	-20 ~ +75°C
Storage Temperature	-30 ~ +85°C
Ambient Relative Humidity	5 ~ 90% RH, non-condensing

## Features of Motion Function

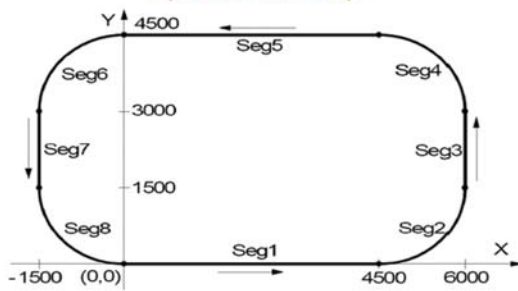


2 or 3-Axis Linear Interpolation

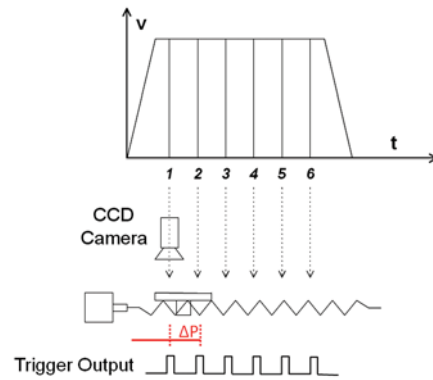


2-Axis Circular Interpolation

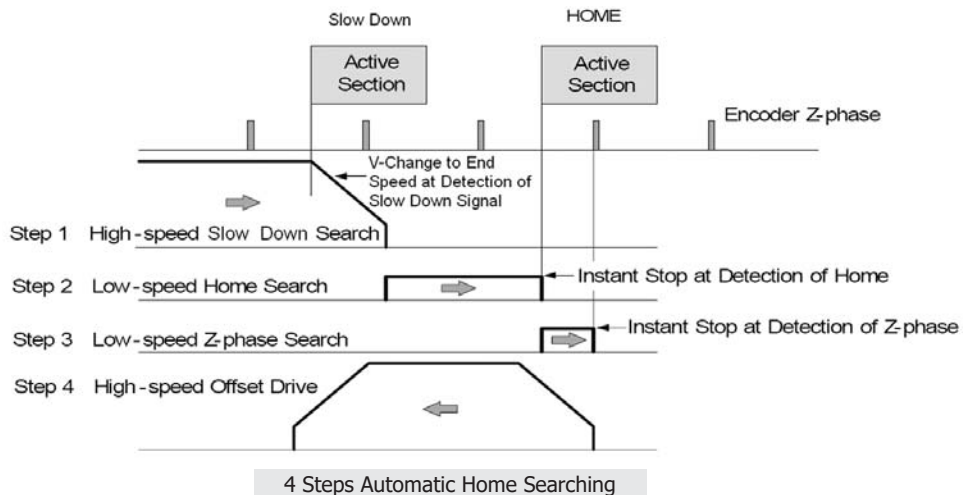
### 8 Segments Continuous Interpolation Motion (Linear+ Circular)



Continuous interpolation



High Speed Position Compare



4 Steps Automatic Home Searching

## Ordering Information

<b>PISO-PS410</b>	PCI Bus, High-speed 4-axis Motion Control Card with FRnet Master
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## Accessories

DN-84100U	Universal Snap-on Wiring Terminal Board for PISO-PS410 and PISO-PS810
CA-SCSI100-15	SCSI-II 100-pin & 100-pin Male Connector Cable, Length 1.5 M.