PCI-8164 / PXI-8164
Advanced 4-axis Servo & Stepper Motion Controllers with High-Speed Triggering

Features
- 32-bit PCI/PXI bus, Rev. 2.2, 33 MHz
- Pulse output rates up to 6.55 MHz
- Pulse output options: OUT/DIR, CW/CCW, AB Phase
- 2 to 4 axes linear interpolation
- 2 axes circular interpolation
- Multi-axis continuous interpolation
- Position/Speed change override
- 13 home return modes and auto home search
- Hardware position compare and trigger with auto-loading FIFO as a buffer
- High-speed position latch function
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profiles
- 28-bit up/down counter for incremental encoder
- Multi-axis, simultaneous start/stop
- Programmable interrupt sources
- Supports up to 12 cards in one system
- Hardware backlash compensator
- Sofware limit function
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors
- All digital inputs and outputs are 2500 Vrms isolated
- Manual pulser input interface
- More than 250 thread safe API functions

Software Support
- OS Information
  - Windows® 8/7/XP
- Software Compatibility
  - VB/VC++/+6/BCB/Delphi/VB.NET
- Various sample programs with source codes
- Software Recommendations
  - MotionCreatorPro

Specifications
- **Pulse Type Motion Control**
  - Number of Axes: 4
  - Pulse Output Rate: 0.01 pps to 6.5 Mpps
  - Max. Acceleration Rate: 245 Mpps2
  - Speed Resolution: 16-bit
  - Encoder Input Rate: 6.55 MHz under 4 x AB phase @ 1 M cable
  - Encoder Counter Resolution: 28-bit
  - Positioning Range: $134,217,728$ to $134,217,727$ pulses (28-bit)
  - Counters: x 4 for each axis
  - Comparators: x 5 for each axis

- **Motion Interface I/O Signals**
  - Position Latch Input Pin: LTC
  - Position Compare Output Pin: CMP (15 kHz for continuous triggering)
  - I/O Input: Differential and 2500 Vrms optically isolated
  - Incremental Encoder Signals Input Pin: EA and EB
  - Encoder Index Signal Input: EZ
  - Mechanical Limit Switch Signal Input Pin: ±EL, SD, and ORG
  - Servomotor Interface I/O Pin: INP, ALM, ERC, R DY, SVON
  - General DO Pin: SVON
  - General DI Pin: RDY
  - Pulser Signal Input: PA and PB
  - Simultaneous Start/Stop Signal I/O Pin: STA and STP

Ordering Information
- **PCI-8164**
  - Advanced PCI 4-axis servo & stepper motion controller with high-speed triggering

- **PXI-8164**
  - Advanced PXI 4-axis servo & stepper motion controller with high-speed triggering

Accessories
For more information on terminal boards & cables, please refer to page 6-31.

Terms Boards
- DIN-1005-01:
  - Terminal board with one 100-pin SCSI-II connector and DIN-rail mounting
- DIN-814-GP:
  - Terminal board with 100-pin SCSI-II connector for general purpose
- DIN-814M:
  - Terminal board for Mitsubishi MR-J2S-A servo amplifier
- DIN-814M-J3A:
  - Terminal board for Mitsubishi MR-J3A/H4A servo amplifiers
- DIN-814Y:
  - Terminal board for Yaskawa Sigma V amplifier
- DIN-814P-A01:
  - Terminal board for Panasonic MINAS A4/AS servo amplifiers with 100-pin SCSI-II connector

Cabling
- ACL-102100-1
  - 100-pin SCSI-II cable (mating with AMP-787082-9), 1 M