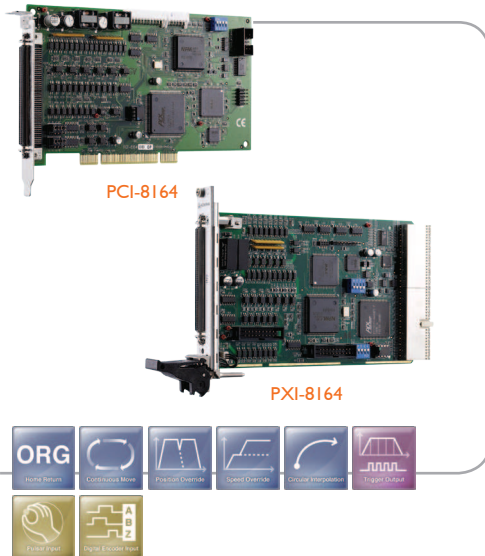


PCI-8164 / PXI-8164

Advanced 4-axis Servo & Stepper Motion Controllers with High-Speed Triggering



Specifications

Pulse Type Motion Control

| | |
|----------------------------|--|
| Number of Axes | 4 |
| Pulse Output Rate | 0.01 pps to 6.5 Mpps |
| Max. Acceleration Rate | 245 Mpps ² |
| 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 Pin | Differential and 2500 V _{RMS} 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, RDY, SVON |
| General DO Pin | SVON |
| General DI Pin | RDY |
| Pulsar Signal Input | PA and PB |
| Simultaneous Start/Stop Signal I/O Pin | STA and STP |

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
- Softwares limit function
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors
- All digital inputs and outputs are 2500 V_{RMS} isolated
- Manual pulser input interface
- More than 250 thread safe API functions

Software Support

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

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.

Terminal Boards

- DIN-100S-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-814M0**
Terminal board for Mitsubishi MR-J2S-A servo amplifier
- DIN-814M -J3A0**
Terminal board for Mitsubishi MR-J3A/J4A servo amplifiers
- DIN-814Y0**
Terminal board for Yaskawa Sigma V amplifier
- DIN-814P-A40**
Terminal board for Panasonic MINAS A4/A5 servo amplifiers with 100-pin SCSI-II connector

Cabling

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

Pin Assignment

PCI-8164/PXI-8164 Pin Assignment of the 100-pin SCSI-type Connector

| | | | |
|-------|----|-----|--------|
| VPP | 1 | 51 | VPP |
| EGND | 2 | 52 | EGND |
| OUT1+ | 3 | 53 | OUT3+ |
| OUT1- | 4 | 54 | OUT3- |
| DIR1+ | 5 | 55 | DIR3+ |
| DIR1- | 6 | 56 | DIR3- |
| SVON1 | 7 | 57 | SVON3 |
| ERC1 | 8 | 58 | ERC3 |
| ALM1 | 9 | 59 | ALM3 |
| INP1 | 10 | 60 | INP3 |
| RDY1 | 11 | 61 | RDY3 |
| EGND | 12 | 62 | EGND |
| EA1+ | 13 | 63 | EA3+ |
| EA1- | 14 | 64 | EA3- |
| EB1+ | 15 | 65 | EB3+ |
| EB1- | 16 | 66 | EB3- |
| EZ1+ | 17 | 67 | EZ3+ |
| EZ1- | 18 | 68 | EZ3- |
| VPP | 19 | 69 | VPP |
| EGND | 20 | 70 | EGND |
| OUT2+ | 21 | 71 | OUT4+ |
| OUT2- | 22 | 72 | OUT4- |
| DIR2+ | 23 | 73 | DIR4+ |
| DIR2- | 24 | 74 | DIR4- |
| SVON2 | 25 | 75 | SVON4 |
| ERC2 | 26 | 76 | ERC4 |
| ALM2 | 27 | 77 | ALM4 |
| INP2 | 28 | 78 | INP4 |
| RDY2 | 29 | 79 | RDY4 |
| EGND | 30 | 80 | EGND |
| EA2+ | 31 | 81 | EA4+ |
| EA2- | 32 | 82 | EA4- |
| EB2+ | 33 | 83 | EB4+ |
| EB2- | 34 | 84 | EB4- |
| EZ2+ | 35 | 85 | EZ4+ |
| EZ2- | 36 | 86 | EZ4- |
| PEL1 | 37 | 87 | PEL3 |
| MEL1 | 38 | 88 | MEL3 |
| CMP1 | 39 | 89 | CMP3 |
| SD1 | 40 | 90 | SD3 |
| ORG1 | 41 | 91 | ORG3 |
| EGND | 42 | 92 | EGND |
| PEL2 | 43 | 93 | PEL4 |
| MEL2 | 44 | 94 | MEL4 |
| CMP2 | 45 | 95 | CMP4 |
| SD2 | 46 | 96 | SD4 |
| ORG2 | 47 | 97 | ORG4 |
| EGND | 48 | 98 | EGND |
| EGND | 49 | 99 | EX+24V |
| EGND | 50 | 100 | EX+24V |