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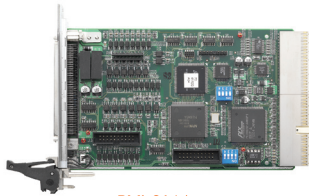
Advanced 4-axis Stepper & Servo Motion Control Cards with High-Speed Triggering

PCI-8164

PXI-8164

Line | ARC | T-Curve | S-Curve | Speed Override | Position Latch | Pulser

TRO | DI/O | Contouring | Backlash Compensation

ADLINK GREEN RoHS Compliant
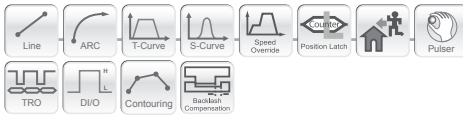
Features

- **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 VRMS isolated**
- **Manual pulser input interface**
- **More than 250 thread safe API functions**

Software Support

- **Windows® Platform**
  - Available for Windows Vista (64-bit) (PCI-8164 only)
  - Available for Windows Vista (32-bit)/XP/2000
  - Recommended programming environments: VB/VC++/BCB/Delphi
  - Various sample programs with source codes
  - Customized API functions are possible

- **RTX (Windows Real Time Extension)**
  - RTX 5.x/6.x/8.1a

- **Linux Platform**
  - Redhat 9, kernel 2.4.x
  - Fedora Core 3, kernel 2.6.9
  - Fedora Core 4, kernel 2.6.11
  - Fedora Core 5, kernel 2.6.15
  - FC 6, kernel 2.6.18

- **MotionCreatorPro™**

  MotionCreatorPro™ assists motion system developers in debugging any cabling problems and resolving complex system configuration before programming.

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 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, RDY, 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 stepping & servo motion control card with high-speed triggering

- **PXI-8164**
  Advanced PXI 4-axis stepping & servo motion control card with high-speed triggering

Accessories

See section 14 for more information on Accessories.

Terminal Boards

- **DIN-100S-01**
  Terminal board with one 100-pin SCSI-II connector and DIN-rail mounting

- **DIN-814M0**
  Terminal board for Mitsubishi MR-J2S-A servo amplifier

- **DIN-814M -J3A0**
  Terminal board for Mitsubishi MR-J3S-A amplifier

- **DIN-814Y0**
  Terminal board for Yaskawa Sigma II/III/V amplifiers

- **DIN-814P-A40**
  Terminal board for Panasonic MINAS A4 amplifier

- **DIN-814PA0**
  Terminal board for Panasonic MINAS A servo amplifier

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

Signal	Pin	Pin	Signal
VPP	1	51	VPP
GND	2	52	GND
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
GND	12	62	GND
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
GND	20	70	GND
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
GND	30	80	GND
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
GND	42	92	GND
PEL2	43	93	PEL4
MEL2	44	94	MEL4
CMP2	45	95	CMP4
SD2	46	96	SD4
ORG2	47	97	ORG4
GND	48	98	GND
GND	49	99	GND
GND	50	100	GND