

# PCI-8102

## Advanced 2-axis Servo & Stepper Motion Controller



### Features

- 32-bit PCI bus, Rev. 2.2, 33 MHz
- Pulse output rates up to 6.55 MHz
- Pulse output options: OUT/DIR, CW/CCW
- 2 axes linear/circular interpolation
- Continuous interpolation
- Position/Speed change override
- 13 home return modes and auto home search
- Hardware position compare
- High-speed position latch function
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profiles
- Multi-axis, simultaneous start/stop
- Programmable interrupt sources
- Supports up to 12 cards in one system
- Hardware backlash compensator
- Softwares limit function
- On-board GPIO: 16IN/16OUT (P2 connector)
- Card index switch setting
- Hardware emergency input
- Security protection for user's program
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors which have pulse train input mode
- All digital inputs and outputs are 2500 VRMS isolated
- Manual pulser input interface
- More than 100 thread safe API functions

### Software Support

- **OS Information**
  - Windows® 8/7/XP
  - Linux
  - RTX 5.x/6.x/8.1a
- **Software Compatibility**
  - VB/VC++/BCB/Delphi
  - Various sample programs with source codes
- **Software Recommendations**
  - MotionCreatorPro 2

### Specifications

#### Pulse Type Motion Control

■ Number of Axes	2
■ Pulse Output Rate	0.01 pps to 6.5 Mpps
■ Max. Acceleration Rate	245 Mpps <sup>2</sup>
■ 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
■ 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	x 16 (P2 connector)
■ General DI Pin	x 16 (P2 connector)
■ Pulser Signal Input	PA and PB
■ Simultaneous Start/Stop Signal I/O Pin	STA and STP

### Ordering Information

- **PCI-8102**  
Advanced 2-axis servo & stepper motion controller

### Accessories

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

#### Terminal Boards

- **DIN-68S-01**  
Terminal board with 68-pin SCSI-II connector and DIN-rail mounting
- **DIN-68M-J3A0**  
Terminal board for Mitsubishi MR-J3A/J4A servo amplifiers
- **DIN-68M-J2A0**  
Terminal board for Mitsubishi MR-J2S-A servo amplifier
- **DIN-68Y-SG110**  
Terminal board for Yaskawa Sigma V servo amplifier
- **DIN-68P-A40**  
Terminal board for Panasonic MINAS A4/A5 servo amplifiers with 60-pin SCSI-II connector
- **DIN-37D-01**  
Terminal board with one 37-pin D-sub connector and DIN-rail mounting (for additional DI/O usage)

#### Cabling

- **ACL-10568-1**  
68-pin SCSI-VHDCI cable (mating with AMP-787082-7), 1 M
- **ACL-10137-1MM**  
37-pin D-sub male/male cable, 1 M (for additional DI/O usage)

### Pin Assignment

#### 68-pin SCSI type Connector

VPP	1	35	VPP
EXGND	2	36	EXGND
OUT0+	3	37	OUT1+
OUT0-	4	38	OUT1-
DIR0+	5	39	DIR1+
DIR0-	6	40	DIR1-
SVON0	7	41	SVON1
ERC0	8	42	ERC1
ALM0	9	43	ALM1
INP0	10	44	INP1
RDY0	11	45	RDY1
EA0+	12	46	EA1+
EA0-	13	47	EA1-
EB0+	14	48	EB1+
EB0-	15	49	EB1-
EZ0+	16	50	EZ1+
EZ0-	17	51	EZ1-
VPP	18	52	VPP
N/C	19	53	EXGND
PEL0	20	54	PEL1
MEL0	21	55	MEL1
EXGND	22	56	EXGND
LTC/SD/PCS0/CLR0	23	57	LTC/SD/PCS1/CLR1
ORG0	24	58	ORG1
N/C	25	59	EXGND
PA+_ISO	26	60	EMG
PA-_ISO	27	61	DIN0
PB+_ISO	28	62	DIN1
PB-_ISO	29	63	DIN2
CMP0	30	64	DIN3
CMP1	31	65	DOU0
EXGND	32	66	DOU1
EXGND	33	67	EXGND
EX+24V	34	68	EX+24V

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