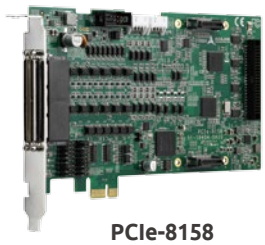
PCIe-8158 / PCIe-8154

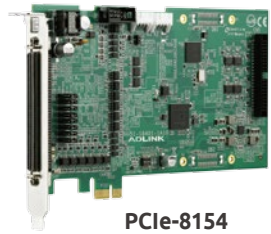
Advanced 8/4-axis Servo & Stepper Motion Controllers

Features

- x1 lane PCI Express interface
- 16CH TTL digital inputs and 16CH TTL digital outputs
- Pulse output rate: up to 6.55 MHz
- Pulse output options: OUT/DIR, CW/CCW, AB Phase
- 2- to 4-axis linear interpolation
- 2-axis circular interpolation
- Helical interpolation
- Multi-axis continuous interpolation
- Position/speed change override
- Hardware emergency input
- Supports up to 12 cards in one system



PCIe-8158



PCIe-8154

Introduction

The PCIe-8154/PCIe-8158 delivers high-frequency pulse rates up to 6.55 MHz and hardware-controlled emergency stop, software security protection, card index switching, and simultaneous linear/circular run, exceeding industrial cost/performance requirements. Compatible with Mitsubishi, Panasonic and Yaskawa servos and any pulse-train controlled servo and stepper drives, the PCIe-8154/PCIe-8158 allows complex moving patterns through multiple axes that move with linear and circular interpolations using continuous contouring. Applicable for a variety of linear and circular trajectories, the PCIe-8154/PCIe-8158 delivers the smoothest motion control for a wide range of manufacturing applications.

Software Support

- **OS Information**
  Windows® 7 / 10
  Linux
  RTX 8.1a/2009
- **Software Compatibility**
  VC++ / C# / VB.NET
  Various sample programs with source code
- **Software Recommendations**
  MotionCreatorPro2/MotionCreatorPro

Ordering Information

- **PCIe-8158**
  Advanced 8-axis servo & stepper motion controller
- **PCIe-8154**
  Advanced 4-axis servo & stepper motion controller

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

Cabling

- **ACL-102100-1 (for PCIe-8154)**
  100-pin SCSI-II cable (mating with AMP-787082-9), 1 M
- **SCSI-VHDCI 100P (for PCIe-8518)**
  100-pin SCSI-VHDCI cable, available for 2 M, 3 M
- **DB37FM-IDC44 Fcable L250**
  44-pin flat cable for built-in I/O

Specifications

Pulse Type Motion Control	
Max. Number of Axes	8
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
I/O Pin	Differential and 2500 VRMS optically isolated
Incremental Encoder Signals Input Pin	EA and EB
Encoder Index Signal Input	EZ
Mechanical Signal Input Pin	±EL, SD, and ORG
Servomotor Interface I/O Pin	INP, ALM, ERC, RDY, SVON
General DO Pin	DO x 8 for DO/CMP
General DI Pin	GDI x 8 for DI/LTC/PCS/SD/CLR/EMG
Pulser Signal Input	PA and PB
Simultaneous Start/Stop Signal I/O Pin	STA and STP
General Purposed TTL DO Channel	16 channel
General Purposed TTL DI Channel	16 channel

Pin Assignment

PCI-8158/PCI-8154 100-pin Mini SCSI Connector Pin Assignment

VDD	1	51	VDD
EXGND	2	52	EXGND
OUT0+	3	53	OUT2+
OUT0-	4	54	OUT2-
DIR0+	5	55	DIR2+
DIR0-	6	56	DIR2-
SVON0	7	57	SVON2
ERC0	8	58	ERC2
ALM0	9	59	ALM2
INP0	10	60	INP2
RDY0	11	61	RDY2
EXGND	12	62	EXGND
EA0+	13	63	EA2+
EA0-	14	64	EA2-
EB0+	15	65	EB2+
EB0-	16	66	EB2-
EZ0+	17	67	EZ2+
EZ0-	18	68	EZ2-
VDD	19	69	VDD
EXGND	20	70	EXGND
OUT1+	21	71	OUT3+
OUT1-	22	72	OUT3-
DIR1+	23	73	DIR3+
DIR1-	24	74	DIR3-
SVON1	25	75	SVON3
ERC1	26	76	ERC3
ALM1	27	77	ALM3
INP1	28	78	INP3
RDY1	29	79	RDY3
EXGND	30	80	EXGND
EA1+	31	81	EA3+
EB1-	32	82	EA3-
EB1+	33	83	EB3+
EB1-	34	84	EB3-
EZ1+	35	85	EZ3+
EZ1-	36	86	EZ3-
PEL0	37	87	PEL2
MEL0	38	88	MEL2
GDI0	39	89	GDI2
DO0	40	90	DO2
ORG0	41	91	ORG2
EXGND	42	92	EXGND
PEL1	43	93	PEL3
MEL1	44	94	MEL3
GDI1	45	95	GDI3
DO1	46	96	DO3
ORG1	47	97	ORG3
EXGND	48	98	EXGND
EXGND	49	99	E_24V
EXGND	50	100	E_24V

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