



PEX-DA4/PEX-DA8/PEX-DA16

PCI Express, 4-ch, 14-bit Analog Output Board PCI Express, 8-ch, 14-bit Analog Output Board PCI Express, 16-ch 14-bit Analog Output Board

■ Introduction

The PEX-DA4/DA8/DA16 series Analog Output boards utilize the PCI Express interface, and are equipped with 4, 8, or 16 Analog Output channels at 14-bit resolution with each DA channel featuring a double-buffered latch.

The voltage output for the PEX-DA series can range from -10 V to +10 V, and the current output range can be from 0 to 20 mA. In addition, the PEX-DA series also provides the following advantages:

- 1. Accurate and easy-to-use calibration: ICP DAS provides a software calibration function, meaning that jumpers and trimpots are no longer required. The calibration data is saved in EEPROM for long-term use.
- 2. Individual channel configuration: Each channel can be individually configured as either voltage or current output.
- 3. Card ID: The PEX-DA series includes a Card ID switch that enables the board to be easily recognized via software if two or more cards are installed in the same computer.

The PEX-DA series is designed as an easy replacement for the PIO-DA series without requiring any modification to either the software or the driver.

Software

Drivers ✓ 32/64-bit Windows 10/11 ✓ Linux Sample Programs ✓ DOS Lib and TC/BC/MSC Demo ✓ VB/VC/Delphi/VB.NET/C#.NET/VC.NET/LabVIEW/Python/MATLAB

Ordering Information

PEX-DA4 CR	PCI Express, 4-ch, 14-bit Analog Output Board (RoHS) Includes one CA-4002 D-Sub connector
PEX-DA8 CR	PCI Express, 8-ch, 14-bit Analog Output Board (RoHS) Includes one CA-4002 D-Sub connector
PEX-DA16 CR	PCI Express, 16-ch 14-bit Analog Output Board (RoHS) Includes one CA-4002 D-Sub connector

A Features

- PCI Express x1 Interface
- 16-channel 5 V/TTL Digital Input
- 16-channel 5 V/TTL Digital Output
- Pull-high/Pull-low Jumpers for DI Channels
- Supports Card ID (SMD Switch)
- 4, 8 or 16-channel 14-bit Analog Output
- Voltage Output: ±10 V
- Current Output: 0 ~ +20 mA (sink)
- Double-buffered DA Latch











Hardware Specifications

Model	PEX-DA4	PEX-DA8	PEX-DA16				
Hardware							
Card ID	Yes (4-bit)						
Connector	Female DB37 x 20-pin Box head						
Analog Output							
Channels	4	8	16				
Range	Voltage: ±10 V Current: 0 ~ 20	mΔ					
Resolution	14-bit	IIIA					
Accuracy		2 LSB @ 25 °C, :	± 10 V				
Voltage Output Capability							
Response Time	166 kHz (Typica	1)					
Slew Rate	0.71 V/µs						
Operation Mode	Static Update						
Digital I/O							
Channels	16						
Туре	5 V/TTL						
TTL Input, ON Voltage Level	2.0 V Min.						
TTL Input, OFF Voltage Level	0.8 V Max.						
Response Speed	500 kHz (Typical)						
Trigger Mode	Static Update	-					
Digital Output							
Channels	16						
Туре	5 V/TTL						
Operation Mode	Static Update						
Voltage	Logic 0: 0.1 V Max. Logic 1: 4.4 V Min.						
Max. Load Current	Sink: 6 mA @ 0.33 V Source: 6 mA @ 4.77 V						
Response Speed	500 kHz (Typica						
Timer/Counter/Freque	ency						
Channels	3						
Туре	5 V/TTL						
Resolution	16-bit						
Reference Clock	Internal: 4 MHz						
PC Bus							
Туре	PCI Express x 1						
Data Bus	8-bit						
Power							
Consumption	750 mA@ +3.3 V 350 mA@ +12 V	750 mA@ +3.3 V 400 mA@ +12 V	750 mA@ +3.3 V 550 mA @ +12 V				
Mechanical							
Dimensions (mm)	116.4 x 172.6 x	22 (W x L x D)					
Power							
Operating Temperature	0 ~ +60°C						
Storage Temperature	-20 ~ +70°C						
Humidity	5 ~ 85% RH, Non-condensing						

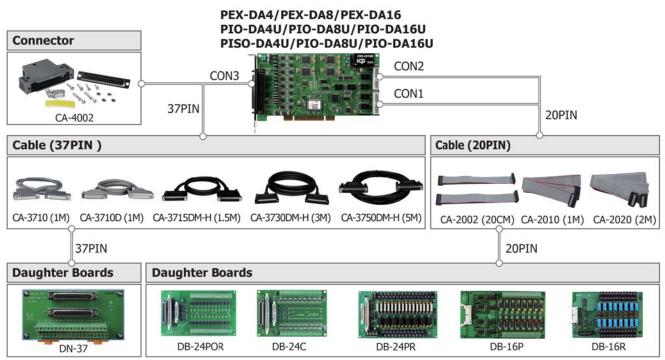
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■ Pin Assignments

Pin Assign- ment	Te	erminal	No.	Pin Assign- ment	Pin Assign- ment	Те	rmiı	nal N	lo.	Pin Assign- ment
ment				ment	DO 0	01	0	0	02	DO 1
VO_0	01				DO 2	03	0	0	04	DO 3
VO 1	02		20	IO_0	DO 4	05	0	0	06	DO 5
VO 2	03		21	IO_1	DO 6	07	<u>ر</u>	0	08	DO 7
VO 3	04		22	IO_2	DO 8	09	0	0	10	DO 9
A.GND	05		23	IO_3	DO 10	11	Jo	0	12	DO 11
VO 4	06		24	N/A	DO 12	13	0	0	14	DO 13
			25	IO_4	DO 14	15	0	0	16	DO 15
VO_5	07		26	IO 5	GND	17	0	0	18	GND
VO_6	80		27	IO_6	+5 V	19	0	0	20	+12 V
VO_7	09		28	IO_7	CON1					
A.GND	10		_		Pin					Pin
A.GND VO_8	10 11		29	N/A	Pin Assign-	Те	rmiı	nal N	lo.	Pin Assign-
			29 30	N/A IO_8	Assign- ment		_			Assign- ment
VO_8 VO_9	11 12		29 30 31	N/A IO_8 IO_9	Assign- ment DI 0	01	0	0	02	Assign- ment DI 1
VO_8 VO_9 VO_10	11 12 13		29 30	N/A IO_8	Assignment DI 0 DI 2	01	0 0	0	02 04	Assignment DI 1 DI 3
VO_8 VO_9 VO_10 VO_11	11 12 13 14		29 30 31	N/A IO_8 IO_9	Assignment DI 0 DI 2 DI 4	01 03 05	000	0 0 0	02 04 06	Assignment DI 1 DI 3 DI 5
VO_8 VO_9 VO_10 VO_11 A.GND	11 12 13 14 15		29 30 31 32	N/A IO_8 IO_9 IO_10	Assignment DI 0 DI 2 DI 4 DI 6	01 03 05 07	0000	0 0 0 0	02 04 06 08	Assignment DI 1 DI 3 DI 5 DI 7
VO_8 VO_9 VO_10 VO_11 A.GND VO_12	11 12 13 14 15 16		29 30 31 32 33	N/A IO_8 IO_9 IO_10 IO_11 IO_12	Assignment DI 0 DI 2 DI 4 DI 6 DI 8	01 03 05 07 09	00000	0 0 0 0	02 04 06 08 10	Assignment DI 1 DI 3 DI 5 DI 7 DI 9
VO_8 VO_9 VO_10 VO_11 A.GND	11 12 13 14 15 16	• • • • • • • •	29 30 31 32 33 34 35	N/A IO_8 IO_9 IO_10 IO_11 IO_12 IO_13	Assignment DI 0 DI 2 DI 4 DI 6 DI 8 DI 10	01 03 05 07 09	000000	0 0 0 0 0	02 04 06 08 10 12	Assignment DI 1 DI 3 DI 5 DI 7 DI 9 DI 11
VO_8 VO_9 VO_10 VO_11 A.GND VO_12	11 12 13 14 15 16		29 30 31 32 33 34 35 36	N/A IO_8 IO_9 IO_10 IO_11 IO_12 IO_13 IO_14	Assignment DI 0 DI 2 DI 4 DI 6 DI 8 DI 10 DI 12	01 03 05 07 09 10	000000	0 0 0 0 0 0	02 04 06 08 10 12	Assignment DI 1 DI 3 DI 5 DI 7 DI 9 DI 11 DI 13
VO_8 VO_9 VO_10 VO_11 A.GND VO_12 VO_13	11 12 13 14 15 16		29 30 31 32 33 34 35	N/A IO_8 IO_9 IO_10 IO_11 IO_12 IO_13	Assignment DI 0 DI 2 DI 4 DI 6 DI 8 DI 10 DI 12 DI 12	01 03 05 07 09 10 12 14	00000000	0000000	02 04 06 08 10 12 14	Assignment DI 1 DI 3 DI 5 DI 7 DI 9 DI 11 DI 13 DI 15
VO_8 VO_9 VO_10 VO_11 A.GND VO_12 VO_13 VO_14 VO_15	11 12 13 14 15 16 17		29 30 31 32 33 34 35 36	N/A IO_8 IO_9 IO_10 IO_11 IO_12 IO_13 IO_14	Assignment DI 0 DI 2 DI 4 DI 6 DI 8 DI 10 DI 12 DI 14 GND	01 03 05 07 09 10 12 14 16	000000000	00000000	02 04 06 08 10 12 14 16 18	Assignment DI 1 DI 3 DI 5 DI 7 DI 9 DI 11 DI 13 DI 15 GND
VO_8 VO_9 VO_10 VO_11 A.GND VO_12 VO_13 VO_14	11 12 13 14 15 16 17		29 30 31 32 33 34 35 36	N/A IO_8 IO_9 IO_10 IO_11 IO_12 IO_13 IO_14	Assignment DI 0 DI 2 DI 4 DI 6 DI 8 DI 10 DI 12 DI 12	01 03 05 07 09 10 12 14	00000000	0000000	02 04 06 08 10 12 14	Assignment DI 1 DI 3 DI 5 DI 7 DI 9 DI 11 DI 13 DI 15

Accessories

= ACCES	301103	
	ADP-20/PCI CR	Extender, Extended dual 20-pin flat-cable connector to PC slot window (RoHS)
	CA-2002 CR	20-pin flat cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin flat cable, 1 M (RoHS)
00	CA-2020 CR	20-pin flat cable, 2 M (RoHS)
0	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
0	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
4	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180°. (RoHS) (RoHS)
2	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180°. (RoHS)
S	CA-3750DM CR	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
0	CA-3750DM-H CR	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
Two I	CA-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
No. of Participation	DB-16P CR	16-channel Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	16-channel Relay Output Daughter Board (RoHS)
	DB-24PR CR	24-channel power relay board (RoHS)
	DB-24POR CR	24-channel Photo Mos relay output board (RoHS)
	DB-24C CR	24-channel open-collector output board (RoHS)
	DN-20 CR DN-20-381 CR	20-pin DIN-RAIL mounting I/O connector board (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)



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