

PEX-DA4/DA8/DA16

PCI Express, 14-bit, 4/8/16-channel 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.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment
VO_0	01	20 IO_0
VO_1	02	21 IO_1
VO_2	03	22 IO_2
VO_3	04	23 IO_3
A.GND	05	24 N/A
VO_4	06	25 IO_4
VO_5	07	26 IO_5
VO_6	08	27 IO_6
VO_7	09	28 IO_7
A.GND	10	29 N/A
VO_8	11	30 IO_8
VO_9	12	31 IO_9
VO_10	13	32 IO_10
VO_11	14	33 IO_11
A.GND	15	34 IO_12
VO_12	16	35 IO_13
VO_13	17	36 IO_14
VO_14	18	37 IO_15
VO_15	19	

Pin Assignment	Terminal No.	Pin Assignment
DO 0	01	02 DO 1
DO 2	03	04 DO 3
DO 4	05	06 DO 5
DO 6	07	08 DO 7
DO 8	09	10 DO 9
DO 10	11	12 DO 11
DO 12	13	14 DO 13
DO 14	15	16 DO 15
GND	17	18 GND
+5 V	19	20 +12 V

Pin Assignment	Terminal No.	Pin Assignment
DI 0	01	02 DI 1
DI 2	03	04 DI 3
DI 4	05	06 DI 5
DI 6	07	08 DI 7
DI 8	09	10 DI 9
DI 10	10	12 DI 11
DI 12	12	14 DI 13
DI 14	14	16 DI 15
GND	16	18 GND
+5 V	18	20 +12 V

Features

- PCI Express x1 Interface
- 14-bit, 4/8/16-channel Analog Output
 - Software Calibration
 - Two Timer-triggered Interrupt Sources
 - Double-buffered DA Latch
- 16-channel 5 V/CMOS Digital Output
- 16-channel 5 V/TTL Digital Input
 - Pull-high and Pull-low Function for DI Channels
- Supports Card ID (SMD Switch)



Software

Drivers

- 32/64-bit Windows XP/2003/2008/7/8/10
- Linux DASYLab

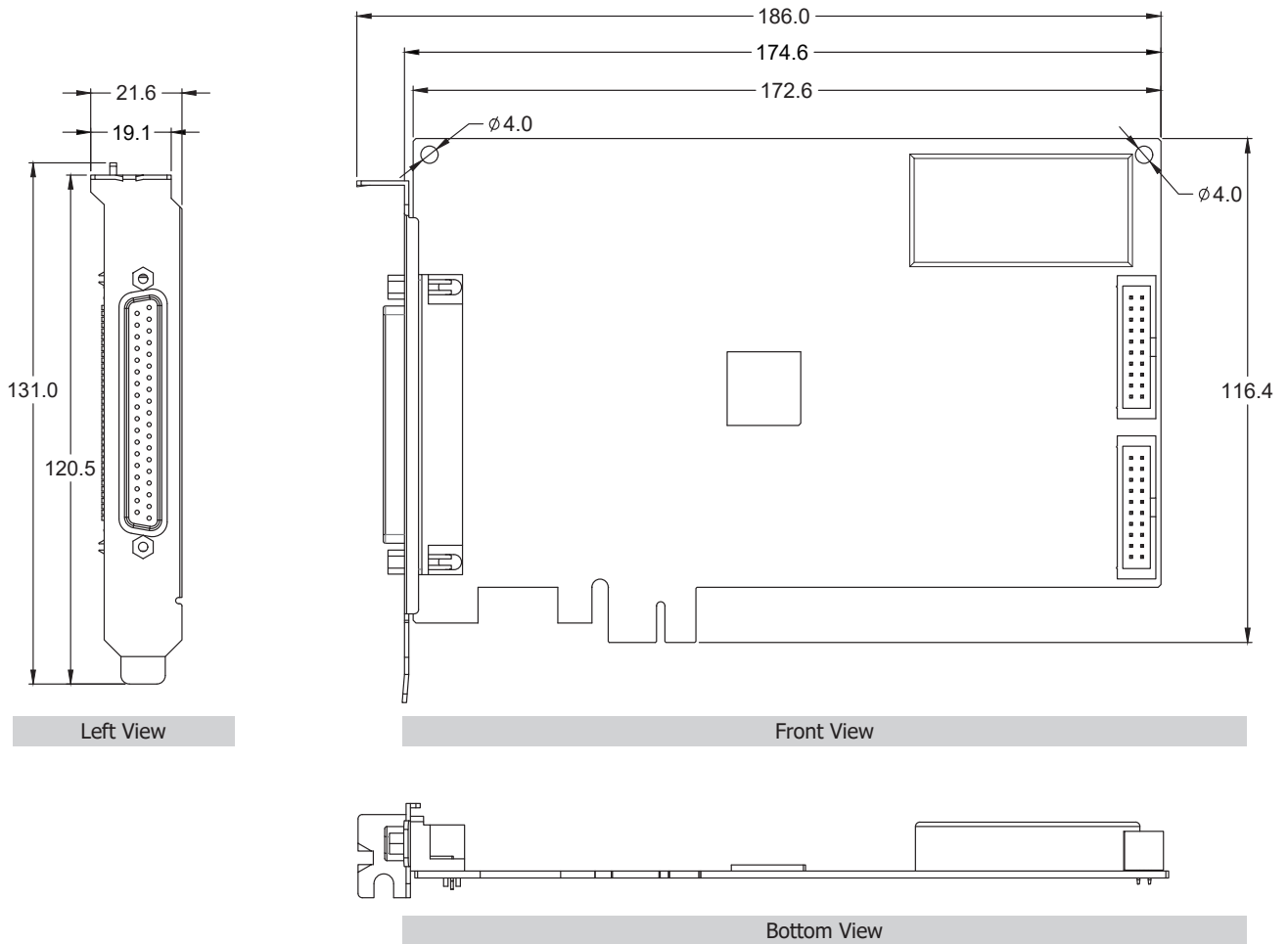
Simple Programs

- DOS Lib and TC/BC/MSC Demo LabVIEW Toolkit
- VB/VC/Delphi/BCB/VB.NET/C#.NET/VC.NET/MATLAB Demo

Hardware Specifications

Model	PEX-DA4	PEX-DA8	PEX-DA16
Analog Output			
Channels	4	8	16
Resolution	14-bit		
Accuracy	0.04% of FSR ±2 LSB @ 25°C, ±10 V		
Output Driving	±5 mA		
Output Range	Voltage	±10 V	
	Current	0 ~ +20 mA	
Output Impedance	0.1 Ω Max.		
Digital I/O			
Channels	DI	16, 5 V/TTL	
	DO	16, 5 V/CMOS	
Input Voltage	Logic 0: 0.8 V Max. Logic 1: 2.0 V Min.		
Output Voltage	Logic 0: 0.1 V Max. Logic 1: 4.4 V Min.		
Output Capability	Sink: 6 mA @ 0.33 V Source: 6 mA @ 4.77 V		
Timer/Counter			
Channels	3		
Resolution	16-bit		
Input Frequency	10 MHz Max.		
Reference Clock	Internal: 4 MHz		
General			
Bus Type	PCI Express x1		
Card ID	Yes (4-bit)		
Connectors	Female DB37 x 1, 20-pin Box Header x 2		
PCB Dimensions (L x H)	172.6 mm x 116.4 mm		
Power Consumption	350 mA @ +12V	400 mA @ +12V	550 mA @ +12V
Operating Temperature	0°C to +60°C		
Humidity	5 to 85% RH, Non-condensing		









Dimensions (Units: mm)











Ordering Information

PEX-DA4 CR	PCI Express, 4-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.
PEX-DA8 CR	PCI Express, 8-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.
PEX-DA16 CR	PCI Express, 16-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.

Accessories

 CA-2002	20-pin flat cable, 20cm x 2
 CA-2010	20-pin flat cable, 1M
 CA-2020	20-pin flat cable, 2M
 CA-3710	DB-37 Male-Male D-sub cable 1M (Cable for Daughter Board (45°))
 CA-3710D	DB-37 Male-Male D-sub cable 1M (Cable for Daughter Board (180°))
 CA-3715DM-H	DB-37 Male-Male Cable, 1.5M, 180° (RoHS)
 CA-3730DM-H	DB-37 Male-Male Cable, 3M, 180° (RoHS)
 CA-3750DM-H	DB-37 Male-Male Cable, 5 M, 180° (RoHS)

 CA-4002	37-pin Male D-sub connector with plastic cover
 DB-16P	16-channel Isolated Digital Input Daughter Board
 DB-16R	16-channel Relay Output Daughter Board
 DB-24PR	24-channel Power Relay Board
 DB-24POR	24-channel PhotoMos Relay Output Board
 DB-24C	24-channel Open-collector Output Board
 DN-20	20-pin Din-Rail Mounting I/O Connector Board
 DN-37	37-pin Din-Rail Mounting I/O Connector Board