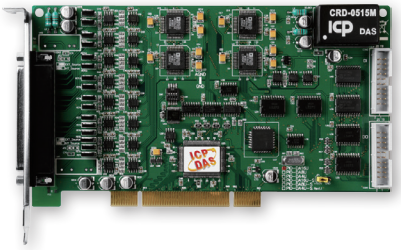


PIO-DA4U/DA8U/DA16U

Universal PCI, 14-bit, 4/8/16-channel Analog Output Board

Introduction

The PIO-DA4U/DA8U/DA16U series cards are compatible with the PCI versions of the PIO-DA4/DA8/DA16 cards and, in most cases, the PIO-DA4U/DA8U/DA16U series can be used as a direct replacement for the PIO-DA4/DA8/DA16 series without requiring any modification to the software or the driver.

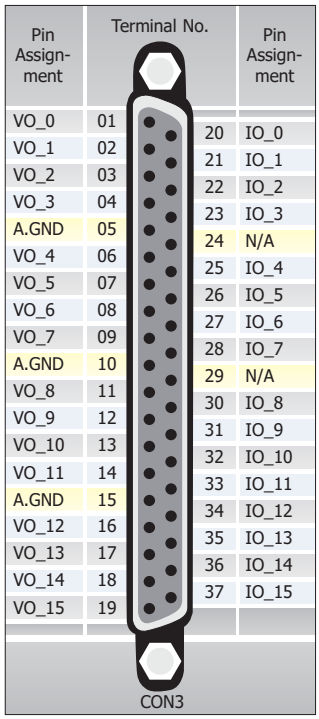
The voltage output range for the PIO-DA4U/DA8U/DA16U series is from -10 V to +10 V, and the current output range is from 0 to 20 mA.
In addition, the PIO-DA4U/DA8U/DA16U series also features the following innovative advantages:

1. Accurate and easy-to-use calibration:
ICP DAS provides a software calibration function rather than manual calibration so that jumpers and trim-pots are no longer required for calibration, and the calibration data can be saved in the EEPROM for long-term use.

2. Individual channel configuration:
Each channel can be individually configured as either voltage or current output.

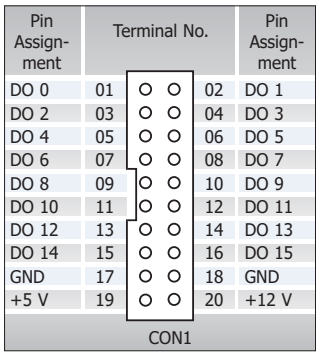
3. Card ID:
ICP DAS has also included an onboard Card ID switch on the PIO-DA4U/DA8U/DA16U series that enables the board to be recognized via software if two or more boards are installed in the same computer.

Pin Assignments



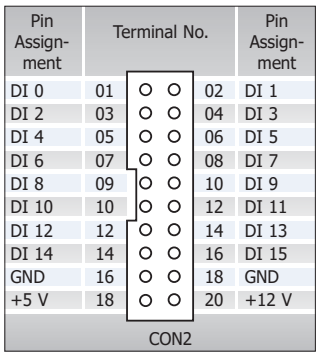
Pin Assignment	Terminal No.	Terminal No.	Pin Assignment
VO_0	01	20	IO_0
VO_1	02	21	IO_1
VO_2	03	22	IO_2
VO_3	04	23	IO_3
A.GND	05	24	N/A
VO_4	06	25	IO_4
VO_5	07	26	IO_5
VO_6	08	27	IO_6
VO_7	09	28	IO_7
A.GND	10	29	N/A
VO_8	11	30	IO_8
VO_9	12	31	IO_9
VO_10	13	32	IO_10
VO_11	14	33	IO_11
A.GND	15	34	IO_12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

CON3



Pin Assignment	Terminal No.	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

CON1



Pin Assignment	Terminal No.	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

CON2

Features

- Universal PCI (3.3 V/5 V) Interface
- 14-bit, 4/8/16-channel Analog Output
  - Software Calibration
  - Two Timer-triggered Interrupt Sources
  - Double-buffered DA Latch
- 16-channel 5 V/TTL 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

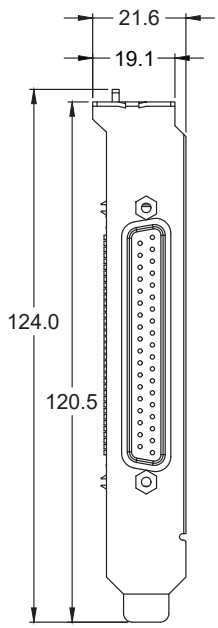
Smple Programs

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

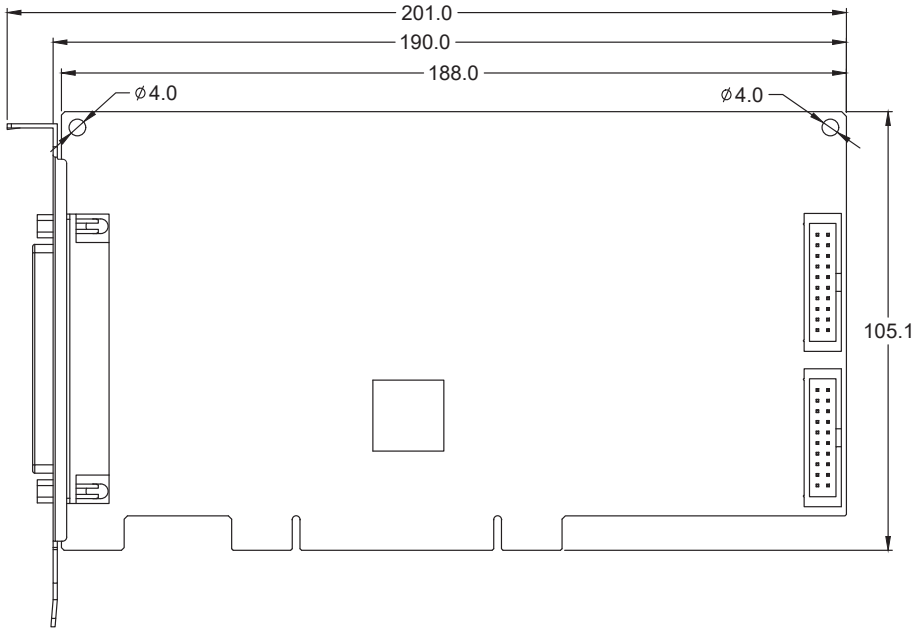
Hardware Specifications

Model		PIO-DA4U	PIO-DA8U	PIO-DA16U
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/TTL		
Input Voltage		Logic 0: 0.8 V Max. Logic 1: 2.0 V Min.		
Output Voltage		Logic 0: 0.4 V Max. Logic 1: 2.4 V Min.		
Output Capability		Sink: 2.4 mA @ 0.8 V Source: 0.8 mA @ 2.0 V		
Timer/Counter				
Channels		3		
Resolution		16-bit		
Input Frequency		10 MHz Max.		
Reference Clock		Internal: 4 MHz		
General				
Bus Type		3.3 V/5 V Universal PCI, 32-bit, 33 MHz		
Card ID		Yes (4-bit)		
Connectors		Female DB37 x 1, 20-pin Box Header x 2		
PCB Dimensions (L x H)		188 mm x 105.1 mm		
Power Consumption		600 mA @ +5 V	800mA @ +5 V	1400 mA @ +5 V
Operating Temperature		0°C to +60°C		
Humidity		5 to 85% RH, Non-condensing		

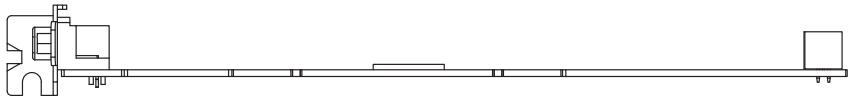
Dimensions (Units: mm)



Left View



Front View



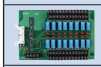
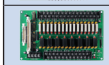
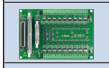
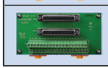
Bottom View

Ordering Information

Universal PCI Version	
PIO-DA4U CR	Universal PCI, 4-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.
PIO-DA8U CR	Universal PCI, 8-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.
PIO-DA16U CR	Universal PCI, 16-channel DA Board (RoHS). Includes one CA-4002 D-sub Connector.
OEM Version	
PIO-DA4U/S	PIO-DA4U with DN-37 (RoHS). Includes one CA-3710 D-Sub cable.
PIO-DA8U/S	PIO-DA8U with DN-37 (RoHS). Includes one CA-3710 D-Sub cable.
PIO-DA16U/S	PIO-DA16U with DN-37 (RoHS). Includes one CA-3710 D-Sub cable.

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