

PISO-DA4U/DA8U/DA16U

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

Introduction

The PISO-DA4U/DA8U/DA16U series provides an additional high-voltage isolation design that protects the Host PC from damage due to unexpected power surges, while the built-in high-quality isolation components provide the boards with 2500 V_{DC} bus-type isolation. The voltage output range for the PISO-DAXU series is from -10 V to +10 V, and the current output range is from 0 to 20 mA.

In addition, the PISO-DAXU 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 PISO-DAXU 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.	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 A.GND
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 A.GND
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
+5V	19	20 +12V

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
+5V	18	20 +12V

Features

- Universal PCI (3.3 V/5 V) Interface
- 14-bit, 4/8/16-channel Analog Output
 - 2500 V_{DC} Bus and Power Isolation Protection
 - Built-in DC/DC Converter with 3000 V_{DC} Protection
 - 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

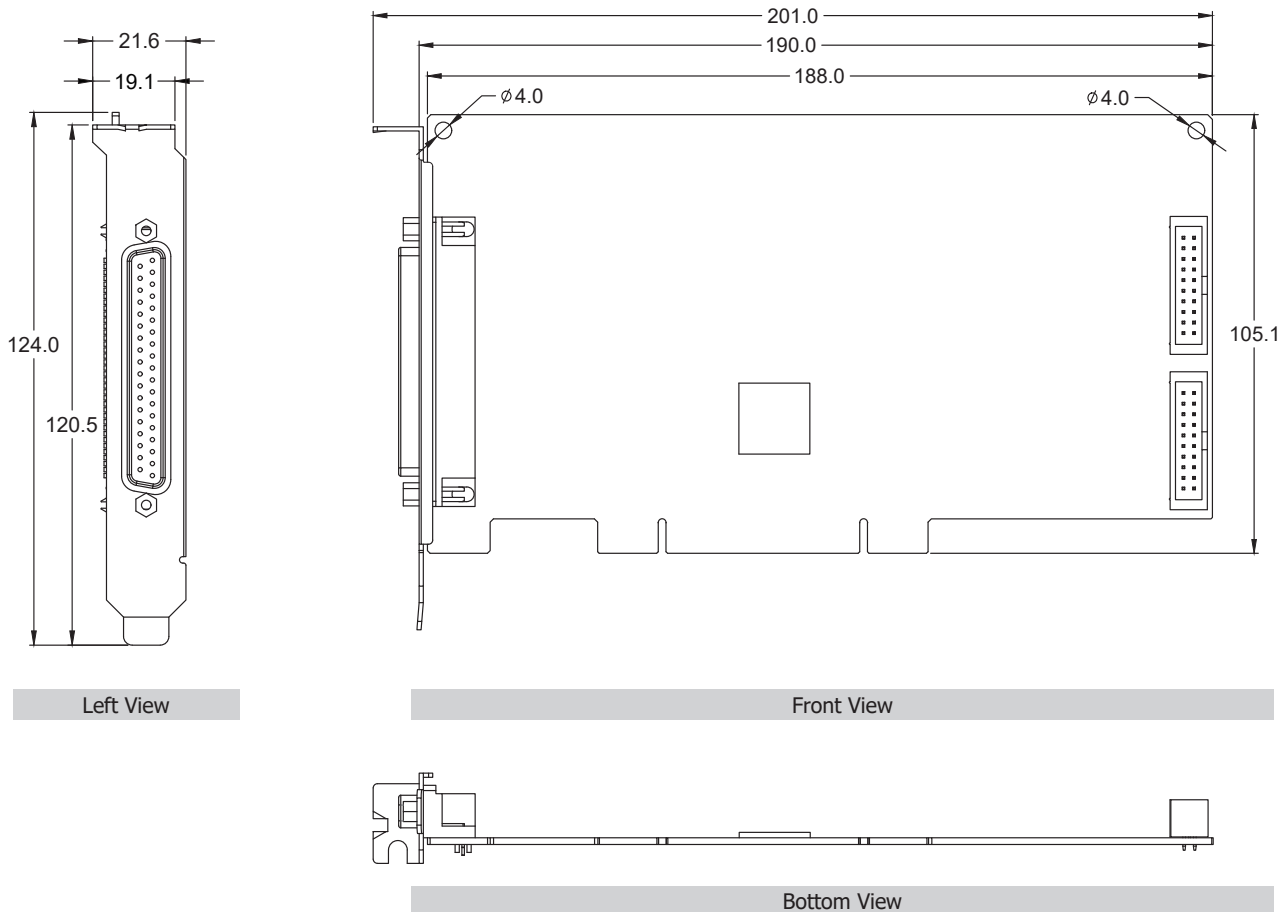
Simple Programs

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

Hardware Specifications

Model	PISO-DA4U	PISO-DA8U	PISO-DA16U
Analog Output			
Channels	4	8	16
Isolation Voltage	2500 V _{DC} (Bus Type)		
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	188 mm x 105.1 mm (L x H)		
Power Consumption	2200mA @ +5 V	2400mA @ +5 V	3000mA @ +5 V
Operating Temperature	0°C to +60°C		
Humidity	5 to 85% RH, Non-condensing		

















■ Dimensions (Units: mm)



■ Ordering Information

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

■ Accessories

 CA-2002	20-pin flat cable, 20cm x 2	 CA-4002	37-pin Male D-sub connector with plastic cover
 CA-2010	20-pin flat cable, 1M	 DB-16P	16-channel Isolated Digital Input Daughter Board
 CA-2020	20-pin flat cable, 2M	 DB-16R	16-channel Relay Output Daughter Board
 CA-3710	DB-37 Male-Male D-sub cable 1M (Cable for Daughter Board (45°))	 DB-24PR	24-channel Power Relay Board
 CA-3710D	DB-37 Male-Male D-sub cable 1M (Cable for Daughter Board (180°))	 DB-24POR	24-channel PhotoMos Relay Output Board
 CA-3715DM-H	DB-37 Male-Male Cable, 1.5M, 180° (RoHS)	 DB-24C	24-channel Open-collector Output Board
 CA-3730DM-H	DB-37 Male-Male Cable, 3M, 180° (RoHS)	 DN-20	20-pin Din-Rail Mounting I/O Connector Board
 CA-3750DM-H	DB-37 Male-Male Cable, 5 M, 180° (RoHS)	 DN-37	37-pin Din-Rail Mounting I/O Connector Board