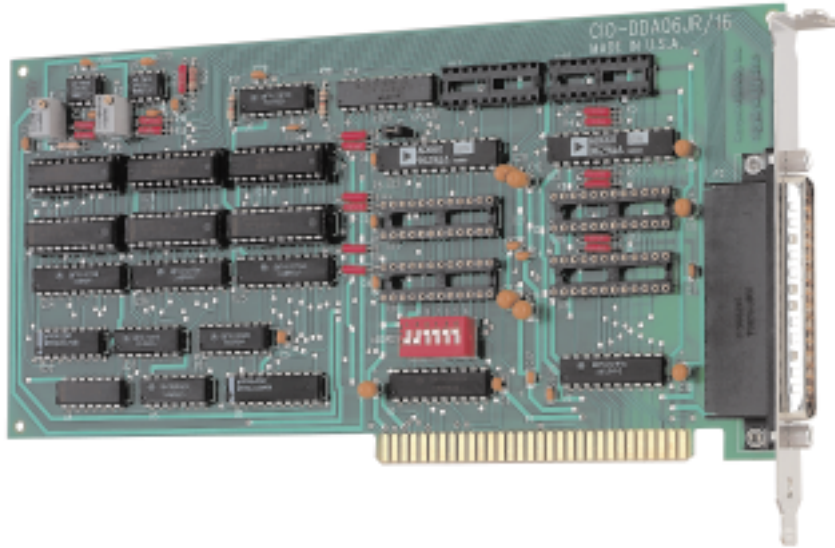


CIO-DDA06/Jr/16

6 Channel, 16 Bit Resolution, Analog Output, 24 High Drive Digital I/O



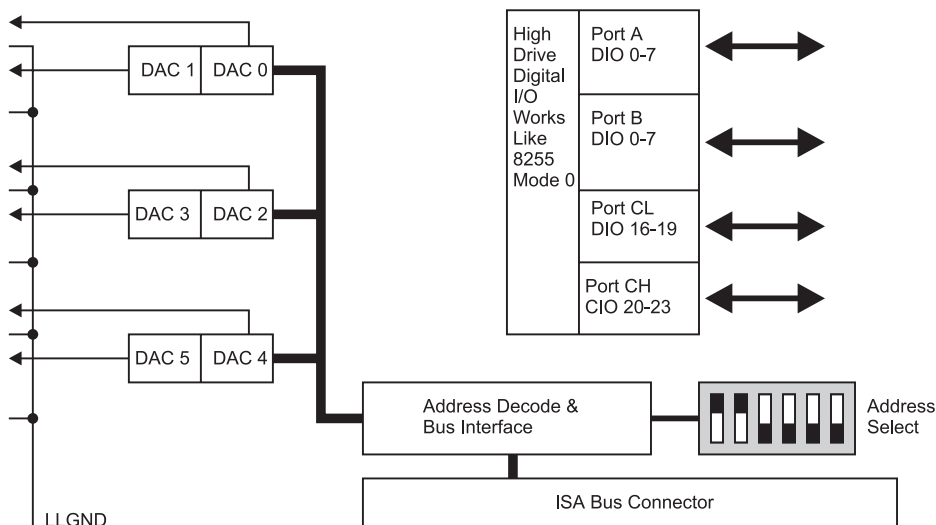
DESCRIPTION

The CIO-DDA06/Jr/16 analog output and digital I/O board is the lowest cost D/A and digital I/O board in the DDA06 register and connector format. Completely populated it supplies 6 channels of DA in a fixed range of $\pm 5V$ at 16 bits (1 part in 65,536) resolution.

Installed in any IBM PC/XT/AT/PS30 or compatible computer the CIO-DDA06/Jr/16 turns your personal computer into an analog and digital control station suitable for proportional valve control, high voltage AC and DC contact monitoring and on/off control. The CIO-

DDA06/Jr/16 is two boards in one; a 24 bit digital input/output board that is CIO-DIO24H compatible and a 6 channel analog output board. The 37 pin D connector's 24 digital I/O pins are assigned identically to the CIO-DIO24H. The analog outputs occupy the remaining pins. This means that accessories such as the SSR-RACK24 just plug right in!

The CIO-DDA06/Jr/16 is supplied with a complete user's manual, calibration software and is supported by Universal Library for DOS and Windows languages, as well as HP VEE and Labtech Notebook.



LLGND	19	●	37	PORT A 0
D/A 0 OUT	18	●	36	PORT A 1
LLGND	17	●	35	PORT A 2
D/A 1 OUT	16	●	34	PORT A 3
LLGND	15	●	33	PORT A 4
D/A 2 OUT	14	●	32	PORT A 5
LLGND	13	●	31	PORT A 6
D/A 3 OUT	12	●	30	PORT A 7
DIGITAL GND	11	●	29	PORT C 0
PORT B 0	10	●	28	PORT C 1
PORT B 1	9	●	27	PORT C 2
PORT B 2	8	●	26	PORT C 3
PORT B 3	7	●	25	PORT C 4
PORT B 4	6	●	24	PORT C 5
PORT B 5	5	●	23	PORT C 6
PORT B 6	4	●	22	PORT C 7
PORT B 7	3	●	21	LLGND
D/A 4 OUT	2	●	20	LLGND
D/A 5 OUT	1	●		

RANGE SELECTION

The analog output range is fixed at $\pm 5V$. The amplifiers and switches which would be required to provide other ranges are expensive. This is one of the reasons the CIO-DDA06/Jr/16 is so inexpensive! For other ranges see the CIO-DDA06/16.

SOFTWARE SUPPORT

The CIO-DDA06/Jr/16 is supplied with software for calibration and test. In addition, the Universal Library provides high level language support for DOS and Windows languages.

Menu driven control programs such as HP VEE, Labtech Notebook and DasyLab support the CIO-DDA06/Jr/16.



To complete the programmers arsenal, VI COMponents for Windows provides VBx OCx or ActiveX controls for complete Graphical Display, Analysis and Control functions.

See the complete data sheet for both of these programming tools, and menu driven packages elsewhere in this catalog.

SIGNAL CONDITIONING & ACCESSORIES

Solid State Relays provide over 4,000 Volts isolation and allow the CIO-DDA06/Jr/16 to sense or control high-voltage AC and DC voltages. The solid state relays mount on the SSR-RACK24 which interfaces directly to the CIO-DDA06/Jr/16.

A complete line of screw terminal boards and cables support both the analog output and digital I/O signals. Screw terminal boards accept 12-22 AWG wire and are constructed of high quality black FR4 with durable jaw-type screw terminals.

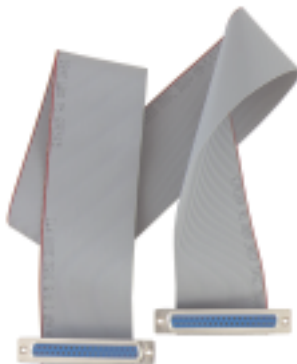
CIO-MINI37



C37FFS-5 CABLE



C37FF-2 CABLE



I/O & CONTROL REGISTER MAP

The CIO-DDA06/Jr/16 and CIO-DDA06/16 are 100% software compatible because the I/O registers have identical functions on each board. I/O registers are the locations which the computer writes commands and data to and reads status and data from.

ADDRESS	FUNCTION	ADDRESS	FUNCTION
Base	D/A0LSB	Base + 8	D/A4LSB
Base + 1	D/A0MSB	Base + 9	D/A4MSB
Base + 2	D/A1LSB	Base + 10	D/A5LSB
Base + 3	D/A1MSB	Base + 11	D/A5MSB
Base + 4	D/A2LSB	Base + 12	PORT A Out/ In
Base + 5	D/A2MSB	Base + 13	PORT B Out/ In
Base + 6	D/A3LSB	Base + 14	PORT C Out/ In
Base + 7	D/A3MSB	Base + 15	Configured digital I/O

BASE ADDRESS SWITCH

The CIO-DDA06 occupies 16 consecutive I/O addresses. The first, or Base Address, is set by a bank of switches in a DIP switch on the board. It is possible to set the base address of the CIO-DDA06 anywhere within the range 0 to 3F0 Hex. Because of this flexibility, multiple CIO-DDA06 boards, or other I/O boards, may be used in the same PC.

Address 300H shown



SW	HEX
A9	200
A8	100
A7	80
A6	40
A5	20
A4	10

9 8 7 6 5 4
↓ ↓ ↑ ↑ ↑ ↑

SPECIFICATIONS

Channels	6 Voltage Output
Resolution	16 Bit, 1 part in 65,536
D/A Type	AD660BN
Latches	Double buffered/Sim. Update
Integral Nonlinearity	± 1 LSB
Differential Nonlinearity	± 1 LSB
Monotonicity	Guaranteed to 15 bits over temp. range
Temperature drift, Gain	15ppm/Deg C
Offset	5ppm/Deg C
Load Current	± 5 mA Max
Short Circuit Current	25mA Typical
Settling Time 20V Step to 0.0008%	8 μ S Typical
Settling Time 10V Step to 0.0008%	6 μ S Typical
Gain Error	$\pm 0.1\%$ of FSR
Offset Error	± 7.5 mV Max

OUTPUT RANGE	Fixed $\pm 5V$
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DIGITAL I/O	
I/O Ports	2 Eight Bit, 2 Four Bit
Total Bits	24
Output High	2.4V Min @ 15mA
Output Low	0.5V Max @ 64mA
Input High	2.0V Min, 7.0V Max
Input Low	-0.5V Min, 0.8V Max

ORDERING GUIDE

6 Channel, 16Bit, $\pm 5V$ D/A (2 installed), 24 Digital I/O	CIO-DDA06/Jr/16
Additional two channels, one dual DAC chip & GAL	CIO-DUAL-DAC/16
24 Channel Solid State Relay Rack	SSR-RACK24
8 Channel Solid State Relay Rack	SSR-RACK08
Screw Terminal Boards	
16" X 4" all signals from one 37 D plus proto area	CIO-TERMINAL
4" X 4" all signals from one 37 D connector.	CIO-MINI37
Plastic enclosure for the CIO-MINI37	ENC-MINI37
16" X 4" all signals from one 37D, Spade Lug Terminals.	CIO-SPADE50
Cables	
2 foot ribbon cable, 37 conductor, female connectors.	C37FF-2
'N' foot ribbon cable, 37 conductor, female connectors.	C37FF-N
5 foot shielded cable, molded female connectors, 37 cond.	C37FFS-5
10 foot shielded cable, molded female connectors, 37 cond.	C37FFS-10