

# CIO-DAC16

## Specifications



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Document Revision 4.1, February, 2010  
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# Specifications

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

## Analog output

Table 1. Analog input specifications

Parameter	Conditions	Specification
D/A converter		AD7237
Resolution		12-bits
<i>Number of channels</i>		<i>16 voltage outputs</i>
Output ranges		$\pm 10\text{ V}$ , $\pm 5\text{ V}$ , $\pm 2.5\text{ V}$ , 0 to 10 V, 0 to 5 V, 0 to 2.5 V. Each channel independently switch selectable.
D/A pacing		Software paced
<i>Data transfer</i>		Software
Offset error		Adjustable to zero
Gain error		Adjustable to zero
<i>Differential nonlinearity</i>		$\pm 1/2\text{ LSB max}$
<i>Integral nonlinearity</i>		$\pm 1/2\text{ LSB max}$
Monotonicity		12-bits
<i>Gain drift (DAC)</i>		$\pm 30\text{ ppm}/^\circ\text{C max}$
Offset drift (DAC)		$\pm 3\text{ ppm}/^\circ\text{C max}$
Throughput		System dependant
Slew rate		0.3 V/ $\mu\text{S}$ typical
<i>Settling time</i>	<i>20 V step to .01%</i>	<i>70 <math>\mu\text{s}</math></i>
<i>Current drive</i>		$\pm 5\text{ mA min}$
<i>Output short-circuit duration</i>		<i>Indefinite</i>
<i>Output coupling</i>		<i>DC</i>
<i>Output resistance (OP-07)</i>		<i>0.1 ohm max</i>
Miscellaneous		<ul style="list-style-type: none"><li>▪ Double buffered output latches</li><li>▪ Update DACs individually or simultaneously (jumper selectable by pairs)</li><li>▪ Power up and reset option, jumper selectable (revision 3 and later): With jumper set to "ZERO", all DACs are cleared to 0 volts, <math>\pm 32\text{ mV}</math>, and DACs are set to simultaneous update mode until first read. With jumper set to "STD", DAC output on power-up is undefined.</li></ul>

## Power consumption

Table 2. Power consumption specifications

Parameter	Conditions	Specification
Supply current	+5 V supply	435 mA typical, 525 mA max
	+12 V supply	140 mA typical, 180 mA max
	-12 V supply	80 mA typical, 105 mA max

## Environmental

Table 3. Environmental specifications

Operating temperature range	0 to 70 °C
Storage temperature range	-40 to 100 °C
Humidity	0 to 90% non-condensing

## Main connector and pin out

Table 4. Connector specifications

Connector type	37-pin male "D" connector
Compatible cables	C37FF-x C37FFS-x DFCON-37 (D-connector, D-shell, and termination pins to construct your own cable)
Compatible accessory products with the C37FF-x cable or C37FFS-x cable	CIO-MINI37 CIO-TERMINAL

Table 5. Connector pin out

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

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