SPECIFICATIONS

CIO-EXP16
CIO-EXP32

Analog Input Expansion

Revision 8, August, 2001

Power consumption
+5V
CIO-EXP16	120 mA typical, 155 mA max
CIO-EXP32	300 mA typical, 390 mA max

Analog input section
Number of channels
CIO-EXP16	16 differential (1 bank)
CIO-EXP32	32 differential (2 banks of 16)
Input range	±10V
Gain	Switch selectable by bank, additive values of X1, X10, X100, X200 and X500
Calibration	One offset and gain potentiometer per bank (16 channels) and one Cold Junction Compensation adjustment potentiometer per board.

Gain Error
Gain = 1	0.002% typical, 0.02% max
Gain = 10	0.005% typical, 0.05% max
Gain = 100	0.01% typical, 0.1% max
Gain = 200	0.02% typical, 0.2% max
Gain = 500	0.05% typical, 0.5% max

Non-linearity
Gain = 1	0.0005% typical, 0.005%
Gain = 10	0.001% typical, 0.01% max
Gain = 100	0.002% typical, 0.01% max
Gain = 200	0.003% typical, 0.01% max
Gain = 500	0.005% typical, 0.02% max

Temperature Coefficient
Gain = 1	$\pm$ 20 ppm / °C
Gain = 10	$\pm$ 20 ppm / °C
Gain = 100	$\pm$ 40 ppm / °C
Gain = 200	$\pm$ 60 ppm / °C
Gain = 500	$\pm$ 100 ppm / °C
Offset	$\pm$ 15mV / °C

Common Mode Range	±10V
CMRR @ 60 Hz	90 dB
Input filter	7 Hz, selectable through solder bridge (C pad)
Open thermocouple detect	−50 mV at positive input when thermocouple is open, selectable through solder bridge (V pad)
Input ground reference	10k ohms to ground, selectable through solder bridge (G pad)

Input leakage current
V and G pads open	2 nA typical, 6 nA max

Input impedance
V and G pads open	>100 MegOhms min
V and G pads shorted	100k Ohms min

Absolute maximum input voltage
Power on	±35V
Power off	±20V

Cold Junction Compensation
CJC Output Voltage	24mV / °C
CJC Zero Crossing	0 mV at 0°C

Analog Output

Number of channels
    CIO-EXP32   2
    CIO-EXP16   1

Output voltage	±10V
Configuration	Single-ended
Current Drive	±5 mA
Output coupling	DC
Output impedance	0.1 Ohms max

Digital Input

Digital Input:	74LS14
Configuration	Four bits for selecting multiplexer channel 0 through 15
Number of channels	4 input
Input High	2.0 volts min, 7 volts absolute max
Input Low	0.8 volts max, −0.5 volts absolute min

Environmental

Operating temperature range	0 to 60°C
Storage temperature range	−40 to 100°C
Humidity	0 to 90% non-condensing

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