

# CIO-CTR05

## Specifications



**MEASUREMENT  
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# Specifications

All specifications are subject to change without notice.

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

## Counter

Refer to the CTS9513-2 data sheet for complete 9513 specifications and operating modes. The data sheet is available on our web site at [www.mccdaq.com/PDFmanuals/9513A.pdf](http://www.mccdaq.com/PDFmanuals/9513A.pdf).

Table 1. Counter specifications

Parameter	Conditions
Counter type	9513
Configuration	One 9513 device. Five up/down counters, 16-bits each.
Clock input frequency	7 MHz max
X2 clock input source	1 MHz (10 MHz Xtal divided by 10)
High pulse width (clock input)	70 ns min
Cycle time (clock input)	145 ns min
Gate pulse duration	145 ns min
Input low voltage	-0.5 V min, 0.8 V max
Input high voltage	2.2 V min, 5 V max
Output low voltage	0.4 V max @ 3.2 mA
Output high voltage	2.4 V min @ -200 $\mu$ A
Crystal oscillator frequency	10 MHz
Frequency accuracy	100 ppm

## Interrupts

Table 2. Interrupt specifications

Number of interrupts	2 to 7, jumper selectable
Interrupt enable	External, enabled with TTL low level
Interrupt sources	External

## Digital input / output

Table 3. Digital I/O specifications

Digital type	Output: 74ACT273
	Input: 74LS373
Configuration	1 bank of 8 as output, 1 bank of 8 as strobed input
Number of I/O	8 input, 8 output
Output high	2.7 volts min @ -0.4 mA
Output low	0.5 volts max @ 8 mA
Input high	2.0 volts min, 7 volts absolute max
Input low	0.8 volts max, -0.5 volts absolute min

## Power consumption

Table 4. Power consumption specifications

+5 V	190 mA typical, 320 mA max.
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## Environmental

Table 5. Environmental specifications

Operating temperature range	0 to 55 °C
Storage temperature range	-20 to 70 °C
Humidity	0 to 90% non-condensing

## Main connector and pin out

Table 6. Main connector specifications

Connector type	37 pin D-type
Compatible cables	C37FF-x, unshielded ribbon cable
Compatible accessory products	CIO-MINI37 CIO-TERMINAL

## P1 pin out

Table 7. P1 pin out

Pin	Signal Name	Pin	Signal Name
1	IR INPUT	20	+5V
2	IR ENABLE	21	DIN STROBE
3	DOUT 7	22	DIN 7
4	DOUT 6	23	DIN 6
5	DOUT 5	24	DIN 5
6	DOUT 4	25	DIN 4
7	DOUT 3	26	DIN 3
8	DOUT 2	27	DIN 2
9	DOUT 1	28	DIN 1
10	DOUT 0	29	DIN 0
11	GND	30	OSC OUT
12	CTR5 GATE	31	CTR5 OUT
13	CTR5 IN	32	CTR4 OUT
14	CTR4 GATE	33	CTR3 OUT
15	CTR4 IN	34	CTR2 OUT
16	CTR3 GATE	35	CTR1 OUT
17	CTR3 IN	36	CTR1 IN
18	CTR2 GATE	37	CTR1 GATE
19	CTR2 IN		

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