

CIO-CTR05 & CIO-CTR10



CIO-CTR05

5 Channel 16 Bit Counter/Timer
8 Digital Outputs
8 Digital Inputs

CIO-CTR10

2, 5 Channel 16 Bit Counter/Timer
16 Digital Outputs
16 Digital Inputs

DESCRIPTION

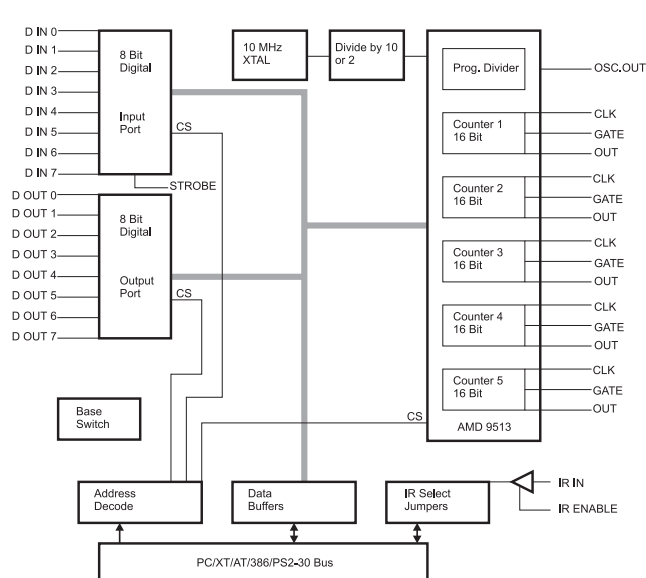
The CIO-CTR05 and CIO-CTR10 are high performance 9513 based counter/timer chips and supporting circuitry on a PC/XT/AT/PS30 bus expansion board.

Each 9513 provides five counters with 16 bit (65,536 count) count registers. The 9513 is an extremely powerful and flexible component which is software programmable for event counting, pulse & frequency measurement, alarm comparator and other input functions. As an output device the 9513 can generate frequencies with complex duty cycles and provide one shot and continuous outputs.

The 9513 counters may be chained via software, enabling a 32, 48, 64 or 80 bit counter to be constructed within the chip. In addition the gate source and gating functions are software programmable. The CIO-CTR05 may be used from any language in either DOS or Windows if you order the Universal Library.

An 8 bit latched digital output port may be used to switch solid state relays and an 8 bit strobed digital input port may be used to sense contact closures. Access to the PC bus interrupts is provided via an interrupt jumper.

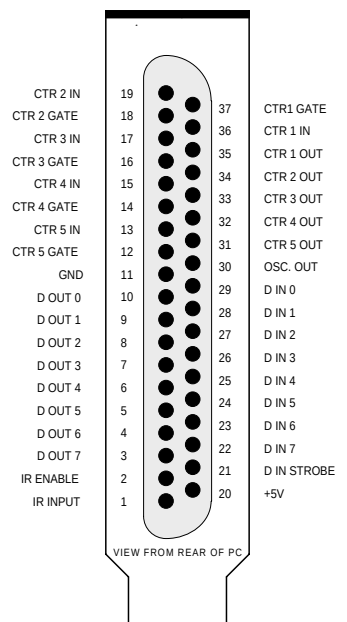
BLOCK DIAGRAM (1/2 OF CTR10 SHOWN HERE)



CABLING & CONNECTION

Cabling to the CIO-CTR is via standard 37 pin D type connectors.

Each cable carries all counter inputs, outputs and gates for one 9513, 8 digital inputs, 8 digital outputs, +5 volts and ground.



I/O REGISTER MAP

The I/O registers of the CIO-CTR05 occupy 4 I/O locations in the PC's I/O address space. The first, or BASE, address is fixed by the base address switch. The CIO-CTR10 uses eight I/O addresses.

CIO-CTR05 & CIO-CTR10

BASE+0	9513#1 DATA
BASE+1	9513#1 CONTROL
BASE+2	DIGITAL INPUT
BASE+3	DIGITAL OUTPUT

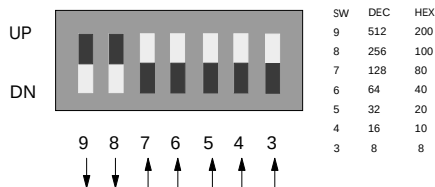
CIO-CTR10 Only

BASE+4	9513#2 DATA
BASE+5	9513#2 CONTROL
BASE+6	DIGITAL INPUT
BASE+7	DIGITAL OUTPUT

BASE ADDRESS SWITCH

SETTINGS SHOWN - 300 HEX, 768 DECIMAL

Set BASE address by switching inputs to a comparator. Each switch corresponds to one address line on the PC bus. Each switch represents one address weight and weights are added to determine a unique address.



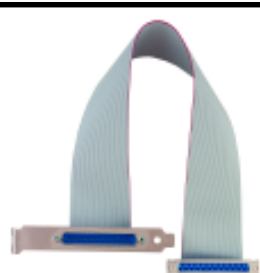
ACCESSORIES

Counters work best when the inputs have sharp, clean edges. Often, the signal source is a button or a switch that bounces or glitches, or the signal may be 0-24V or some voltage higher than TTL levels.

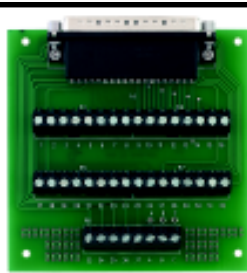
The CIO-TERMINAL combines screw terminals with signal conditioning circuitry. Voltage divider and low pass filter circuits occupy a portion of the 16" X 3.5" board area. To de-bounce a counter input, simply populate one of the low pass filter circuits and connect it to the counter's input signal.

Some people prefer spade lugs over screw terminals. The CIO-SPADE50 is designed for rugged NEMA cabinet mounting and accepts spade lugs on its terminals.

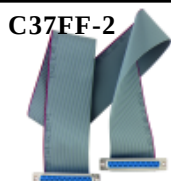
For economy of space and funds, the CIO-MINI37 provides 12-22 AWG screw termination of all 37 signals plus three spares, for one half the cost of larger screw terminal boards.



BP-37



CIO-MINI37



C37FF-2

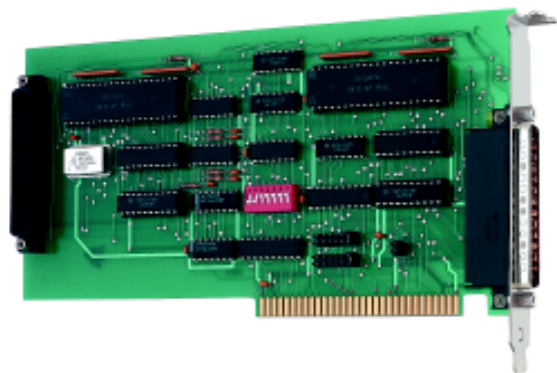
High quality cables can save you hours of valuable time.



C37FFS-5

CIO-CTR10

2, 5 Channel Counter/Timers with 16/16 Digital In/Out

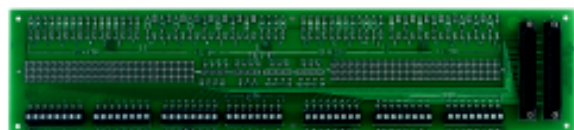


DESCRIPTION

The CIO-CTR10 is exactly two CIO-CTR05s so the block diagram, connector pin-out and programming information apply to both boards. The CIO-CTR10 has two 9513 counter/timer chips, 16 digital inputs and 16 digital outputs. The CTR10 is an economical solution for those applications where 10 counters are needed and cost is an issue.

CIO-CTR/H50 50 ppm XTAL

Order your CIO-CTR board with the suffix "/H50" and it will arrive with a high accuracy 50 part-per-million XTAL in place of the standard 100 ppM XTAL!



CIO-TERMINAL

ORDERING INFORMATION

5 Counters (16 bit), 8 Digital In, 8 Digital Out
Same but with 50ppm XTAL
10 Counters (16 bit), 16 Digital In, 16 Digital Out
Same but with 50 ppm XTAL

CIO-CTR05
CIO-CTR05/H50
CIO-CTR10
CIO-CTR10/H50

16" X 3.5" Screw Terminal w/ Debounce & V Divide
4" X 4" Economy Screw Terminal
Plastic enclosure for the MINI37
16" X 4" Spade Lug termination pannel

CIO-TERMINAL
CIO-MINI37
ENC-MINI37
CIO-SPADE50

Cable, 37 Conductor, Female both ends, 2 ft.
Cable, 37 Conductor, Female, Custom length.

C37FF-2
C37FF-#

Cable, 37 Conductor, Female, Shielded Round with molded connector ends, 5 ft. and 10 ft. lengths.

C37FFS-5
C37FFS-10

Backplate, cable & connector to rear 37 pin connector

BP-37

Connector Kit, AMP crimp pins, connector & shell.

DFCON-37