

# TIME/COUNT CONTROL



CX300

The CX can be used with either a sustained start input or a momentary contact input. When a momentary contact input is used with the standard start mode, an OXO interval output on the CX can be used to provide power back to the start input on terminal 1. See the wiring diagrams for more information.

## TIME INHIBIT/COUNT INPUT

The CX has two terminals (B & C) which act as either a count input when the unit is programmed as a counter or as a time inhibit input when the unit is programmed as a timer. The B-C terminals operate on either 120 volts AC or DC (CX312/342) or low voltage AC or DC (CX311/341).

Application of voltage to the B-C inputs will result in a count being registered in the counter mode. See the programming procedure section for more information on how the count modes operate.

In the timer modes, the application of voltage to the B-C inputs will stop the timing cycle and hold the outputs in their last state without resetting the unit. Timing will continue and the outputs will be allowed to change according to their programmed operating modes when voltage is removed from terminals B-C.

## PROGRAMMING PROCEDURE

A series of 7 miniature rocker switches located inside the unit housing are used to program the time/count range and the load sequence of the CX300 Timer/Counter. The following table defines the switch conditions to program the operating parameters. **CAUTION: The product label should always be marked to indicate the operating mode of the unit.**

X = Switch ON O = Switch OFF Blank = Does Not Apply

SYM	PROGRAMMED CONTACTS OUTPUT SEQUENCE	SWITCH NUMBER							Notes
		1	2	3	4	5	6	7	
1	OOX — ON DELAY	X	X						
2	OXO — INTERVAL	O	X						
3	OO <input checked="" type="checkbox"/> Pulse Output	X	O						a
4	OO <input checked="" type="checkbox"/> Pulse & Repeat	O	O						a, b
TIME OR COUNT INPUT RANGE									
1	COUNT—7500/Sec			X	X	X			b, c
2	COUNT—500/Min			O	X	X			d
3	COUNT—5000/Min			X	O	X			d
4	TIME—.01 Sec			O	O	X			
5	TIME—0.1 Sec			X	X	O			
6	TIME—0.001 Sec			O	X	O			
7	TIME—Min/Sec			X	O	O			e
8	TIME—Hrs/Min			O	O	O			e
BATTERY									
1	Battery ON						X		f
2	Battery OFF						O		f
START MODE									
1	Standard Start							O	
2	Reverse Start						X		g

## NOTES:

- In reverse start operation, if a power interruption occurs during the pulse output, the unit will power up in the pulse output mode and complete the time remaining for the pulse output.
- When programmed for range 1, load sequence 4 (pulse and repeat), the maximum count rate is 2500/second.
- When programmed for count range 1, counts are registered upon application (leading edge) of voltage to the count line. **USE RANGE #1 WITH 12-50 VDC COUNT INPUT.** In addition, count input line length must be considered and not exceed 50 feet of twisted pair, shielded cable. Shield must be attached to earth ground or machine frame at machine frame end of cable.
- When programmed for count range 2 or 3, counts are registered when voltage is removed (trailing edge) from count line. Range 2 should be used whenever possible to provide the best protection from contact bounce of the count source.
- In these ranges the last two digit positions are limited to 59. If a setpoint exists in memory from another range where the last two positions can be greater than 59, a new setpoint must be entered if the unit is reprogrammed to time range 7 or 8.
- Battery must be switched off for storage or shipment. Battery must be switched on for proper operation of CX300 unit. Turn the battery off to erase the memory and to reset the unit.
- In the reverse start mode if power is interrupted the accumulated time which has elapsed, but not resulted in a change in the display is lost. For example, a timer is set for the hour:minute range with one minute remaining to time out shown on the display, but only 10 seconds actual remaining to time out. If a power interruption occurs, the unit will power back up with the last full minute remaining before time out.

## Entering and Displaying Setpoints

When the CX300 unit is powered up for the first time, or after the battery has been cycled off and on, the digit display will show four hyphens. The unit will not operate until it has been provided with a setpoint, clearing the display of hyphens.

To create or change a setpoint, press the SET key. The setpoint, if any, is displayed and the panel key pads become active. The operation of the timing or counting function and the output loads are not affected. For setpoint changes, the SET indicator appears on the graphics panel. The setpoint is changed by pressing appropriate  $\Delta$  or  $\nabla$  key pads. Pressing a  $\Delta$  key increments the setpoint digit located above the key; the  $\nabla$  key decrements the digit located above the key. If the key is continually depressed the digit will change every .5 second until the key is released. The display will carry to