EAGLE SIGNAL brand

CX200 Microprocessor Timer/Counter



Microprocessor based solid state timer/ counter... housed in CYCL-FLEX[®] case



The CX200 is a microprocessor based timer/counter housed in a standard 15 terminal CYCL-FLEX® plug-in case. Time or count operation, time range, and standard or reverse start operation is selected by 7 miniature rocker switches located inside the unit housing. Time or count setpoints are entered into the unit using a sealed membrane keypad on the front of the unit. Each digit in the setpoint is individually increased or decreased by pressing the appropriate keypad switch. Time or count setpoint and progress is displayed on the front of the unit but a 4 1/2 digit liquid crystal display with .5 inch digits. Time or count subtracts from the setpoint alm output changes state at zero. Operational mode annunciators also appear in the display area on the front of the unit. The mode annunciator flashes when the unit is timing or counting.

- Five time ranges from 19.999 sec. to 199 hrs.: 59 min.
- Two count rates accept and display counts from 1 to 19999
- Two relay outputs socket mounted for easy replacement
- Two form C instantaneous contacts and two form C programmed contacts
- N.O. solid state MOSFET, delayed action switch rated at 1 ampere continuous load current, 0-264 VAC 50/60 Hz or DC
- Ideal output for switching low level signals and high voltage loads due to MOSFET output's ON resistance of 0.5 ohm and very low OFF leakage
- Programmed outputs operate in one of four load sequences; OOX, OXO, OOX with pulse output, and OOX pulse output with repeat cycle operation
- Standard start is defined as ON delay reset timer or counter
- For standard start units, timer/counter resets on power failure
- Reverse start or OFF delay units will not reset on power failure and will continue cycle when power is restored
- Non-volatile memory data retention

SPECIFICATIONS

Time/Count Ranges:

Sym.	Maximum Range	Minimum Setting	Count Rate
1	19999 Cts.	1 Ct.	500/Min. AC.
2	19999 Cts.	1 Ct.	5000/Min. AC
3	199.99 Sec.	.01 Sec.	
4	1999.9 Sec.	.1 Sec.	
5	19.999 Sec.	.001 Sec.	
6	199 Min.: 59 Sec.	1 Sec.	
7	199 Hr.: 59 Min.	1 Min.	

Operating Voltage/Frequency: A6 - 120 VAC, 50/60 Hz B6 - 240 VAC, 50/60 Hz

K6 - 208 VAC, 50/60 Hz

Time Inhibit/Count Line Voltage/Frequency:

- A6 120 VAC 50/60 Hz
- B6 240 VAC 50/60 Hz
- K6 208 VAC 50/60 Hz
- Setting Accuracy: Time: ±0.1% or 50 ms, whichever is larger (0° to 60°C) Count: 100%

Repeat Accuracy:

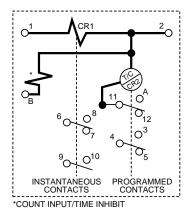
- Time: $\pm 0.001\%$ of setting or 35 ms, whichever is larger (0° to 60°C) Count: 100%
- Reset Time: 30 ms following voltage removal from simulated clutch input (CR1)

Power on Response: 300 ms maximum after voltage applied to terminal 11

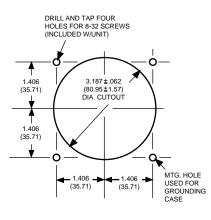
Operating Temperature: +32° to +140°F (0° to +60°C)

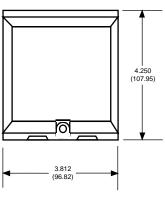
- Output Rating: Relay: 10 amp (resistive), 120 VAC Mechanical Life: 20 million operations Electrical Life: contingent upon controlled load Solid State: 1 amp, 0-264 VAC, VDC
- Vibration: Unit function is unaffected by 2.5G sinusoidal vibration magnitude in both directions of the perpendicular mounting axes imposed from 10 to 100 Hz
- Static Discharge: Unit function is unaffected by a constant 3600 volt peak, 60 Hz discharge applied to the grounded front plate at a relative humidity of less than 25%
- Agency Approvals: UL Recognition E96337 CSA Certification LR26861

CX200 TERMINAL ASSIGNMENTS



MOUNTING





CR1

*COUNT INPUT/TIME INHIBIT

11 -0

03

1 AMPHERE SOLID STATE MOSFET SWITCH

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3.062 (77.77) 4.125 (104.78) 5.750 (146.05)

TERMINALS AND WIRING DIAGRAM ON REAR OF TIMER CASE

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CR1

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ENCLOSURES

Model No.	NEMA Class	Description	
HN308	1	Surface Mtg. with terminal block	
HN364	1	Surface Mtg. without terminal block	
HN370	1A	Dual unit cabinet less unit cases and toggle switch, with 9 terminal block	

ACCESSORIES

Model No.	Description	
H-5331	Mounting Brackets 2 req'd per timer	
HP50-31	One Hole Mounting Ring	
HP50-131	CYCL-FLEX Water-Sealed Housing	
HP50-133	250-133 Surface Mounting Adapter to use in place of brackets	
PDM-534	1/4 DIN Adapter Plate	

ORDERING INFORMATION

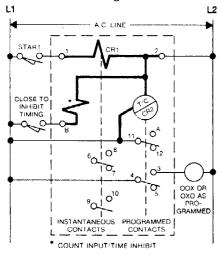
		<u>CX2</u>	<u>02</u>	<u>A6</u>		
OUTPUT TYPE					VOLTAGE & FREQUENCY	
Sym.	Description				Sym.	Description
02	10 amp Relay Output				A6	120 VAC, 50/60 Hz
42	1 amp Solid State MOSFET				B6	240 VAC, 50/60 Hz
			-		K6	208 VAC, 50/60 HZ

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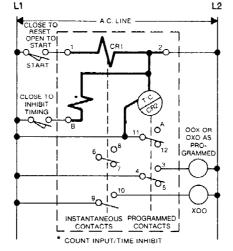
ELECTRONIC

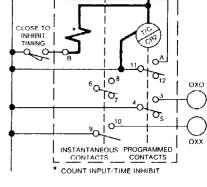
WIRING DIAGRAMS Bold Lines are Internal Wiring

Power to unit is applied to terminal 11 and 2. The unit is started by applying power to terminals 1 and 2. **Power must be applied to terminal 11 at least 300 milliseconds before power is applied to terminal 1.** An isolated input is provided on terminal B which functions as a count input when the unit is used as a counter or as a time inhibit input when the unit is programmed to operate as a timer. Two sets of instantaneous contacts are provided which transfer whenever terminal 1 is energized. In addition, two sets of programmed contacts are provided. When programmed for Reverse Start, the unit will start when voltage is removed from terminal 1.



Standard Start — Close start switch to time; open to reset. Cycle progress is stopped without reset by closing inhibit switch. Unit resets on power failure. Setpoint is maintained by battery. Instantaneous contacts actuate with start switch. The programmed contacts actuate as programmed by rocker switches 3-5.





A C LINE

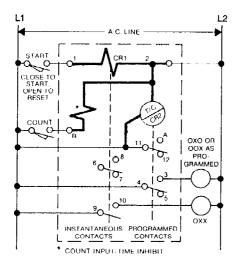
L2

L1

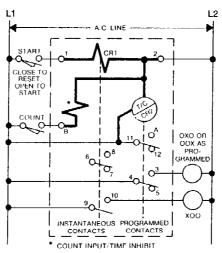
CLOSE TO START

Reverse Start — Open switch to time; close to reset. Cycle progress is stopped without reset by closing inhibit switch. Unit does not reset on power failure. Battery retains cycle progress and setpoint.

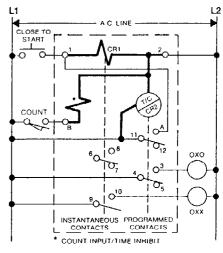
Momentary Start — Close to time. Automatic reset at end of timing period. (Programmed for OXO output ONLY).



Standard Start — Close start switch to start, open to reset. Counts are registered when count switch opens. Unit resets on power failure. Setpoint is maintained.

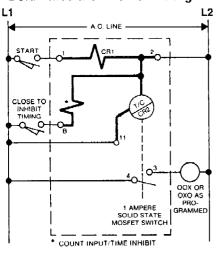


Reverse Start — Close start switch to reset, open to start. Unit does not reset on power failure. Battery retains cycle progress and setpoint

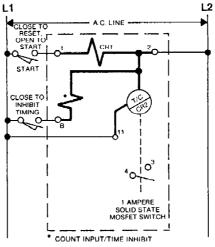


Momentary Start — Close to count. Automatic reset at end of counting period. (Programmed for OXO output ONLY).

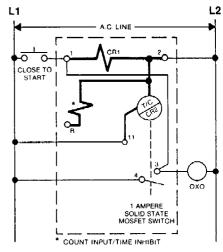
WIRING DIAGRAMS — Solid-State Output Bold Lines are Internal Wiring



Standard Start — Close start switch to time; open to reset. Cycle progress is stopped without reset by closing inhibit switch. Unit resets on power failure. Setpoint is maintained by battery. Solid state delay contact actuates as interval (OXO) or delay (OOX) sequence as programmed by rocker switches.



Reverse Start — Open switch to time; close to reset. Cycle progress is stopped without reset by closing inhibit switch. Unit does not reset on power failure. Battery retains cycle progress and setpoint



Momentary or Sustained Start — Close to time. Automatic reset at end of timing period with start switch open or closed. (Programmed for OXO output ONLY.)

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CX WIRING AND INSTALLATION PROCEDURES

1. Install the resistor capacitor suppressor, Eagle part number PBN2002 between terminals 2 and 11. A PBN2002 resistor capacitor suppressor (Quencharc) kit is shipped with every CX.

2. After wiring is complete, power should be applied constantly to terminal 11. The CX should be started and reset by closing and opening switch to Terminal 1 only. This meets the requirements of having power to terminal 11 at least 300 milliseconds before power is applied to terminal 1.

3. In electrically noisy environments, it may be necessary to suppress the loads. Most commonly, electrical noise can be traced to the inductive loads in the control circuit. It is especially important to quench inductive loads turned ON and OFF by the CX. A quencharc (Part Number PBN2002) should be placed in parallel with the load. This should be done at the load but can be done by wiring a quencharc between terminal 2 and the switching contact.

4. The CX should be well grounded to the enclosure and the enclosure should be on a good factory ground. The CX's housing lower mounting hole is used as a ground connection. (See Mounting Dimension section in this bulletin.)

5. Do not bundle AC wires. Do not bundle input wiring lines to terminal 1, 11, and 2 with relay output wiring. Do not bundle AC wires with DC input wires.

6. Any large components such as motor starter contactors that emit EMI should be located a couple of feet away from the CX.