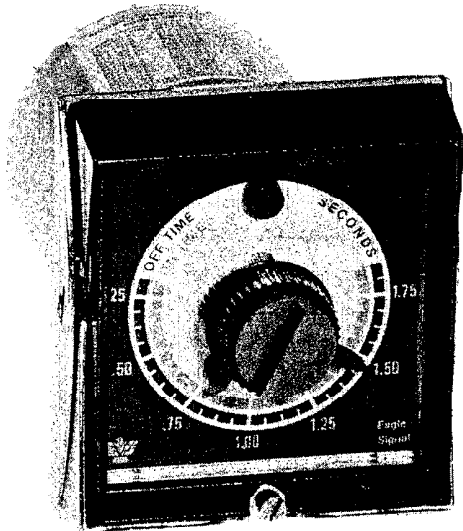


TIME CONTROL



CA SERIES REPEAT CYCLE TIMER



The CA Series is a solid-state Repeat Cycle Timer housed in a standard Cycl-Flex® case. The timer uses two large scale CMOS integrated circuits for the timing functions. The maximum time ranges for the ON and OFF time periods are programmable separately for any one of the 19 time ranges, giving 361 timing combinations. A pilot light on the front of the unit lights to indicate the ON time period.

Standard CA Series units have both relay and triac outputs. Application of power initiates OFF time first, allowing for power up requirements that may exist in some applications. All standard stock units are assembled at the factory with a percentage dial and rocker switches for field programming of time ranges.

A programmable feature of the CA Series Timer provides ON time first timing, so that application of power initiates the ON timing period.

OPERATION

The timing base for each of the two timing states (ON time and OFF time), is generated by an RC oscillator, set by a precision capacitor and one of the two dial potentiometers. When line voltage is applied, the OFF timing period starts; for standard units (ON time starts for units so programmed). The relay is energized or the triac output is ON, during the ON time period. At the end of the initial time period, the relay or triac changes state and remains in that state to the end of the next time period. The timer then repeats this cycle until line voltage is removed from the unit.

SPECIFICATIONS

Programmable Time Ranges

Catalog Symbol	Dial Range	Minimum Setting	Catalog Symbol	Dial Range	Minimum Setting
25	5 Sec	50 ms	36	4 Min	24 Sec
26	1 Sec	100 ms	37	8 Min	48 Sec
27	2 Sec	200 ms	40	15 Min	90 Sec
30	3.75 Sec	375 ms	41	30 Min	3 Min
31	7.5 Sec	750 ms	42	60 Min	6 Min
32	15 Sec	1.5 Sec	43	120 Min	12 Min
33	30 Sec	3 Sec	44	4 Hrs	24 Min
34	60 Sec	6 Sec	45	8 Hrs	48 Min
35	120 Sec	12 Sec	46	15 Hrs	90 Min
			47	30 Hrs	180 Min

Setability

Within $\pm 5\%$ of Maximum Range or 100 msec whichever is greater

Repeatability (Constant Voltage & Temperature)

$\pm .1\%$ or 25msec whichever is greater

Repeatability (Voltage & Temperature Variation)

Variable Voltage $\pm 1\%$ of setting or 25 msec

Variable Temperature $\pm 2\%$ of setting or 25 msec

Variable Voltage & Temperature $\pm 3\%$ of setting or 25 msec

Reset Time

150 ms

Cycle Progress

Pilot light during "ON" time period

Voltage/Frequency

102 - 132 VAC, 50/60 Hz

Burden

120 VAC

Standard

4.8 VA Max.

Output Rating

Triac - 1 amp steady state, 10 amp inrush for one cycle, load must draw 50 ma minimum

Relay - 10 amp steady state

Mechanical Lifetime - Over 20 million operations

Electrical Lifetime - Contingent on load characteristics

Power Interruption

Line voltage interruptions of 20 ms or less will not reset unit

Power On Response

50 ms max. after application of line voltage to pins 1 & 2

Operating Temperature

0 - 60°C (+32 - 140°F)

Transient Voltage Immunity

Performance unaffected by 50 μ S, 600V peak transients superimposed on line input

Vibration

Performance unaffected by 2.5G sinusoidal vibration magnitudes in both directions of three perpendicular mounting axes imposed from 10 to 1000 Hz

Eagle Signal Controls

A Division of Mark IV Industries, Inc.
8004 Cameron Road, Austin, Texas 78753 U.S.A.

CA

BULLETIN 326

Dynapar, Veeder Root, and Eagle Signal Brands:

Sales, Repair, and Application Support:

1675 Delany Rd.

Gurnee, IL. 60031

847-662-4150 Sales/Order Entry Fax

847-782-5277 Applications Support Fax

800-873-8731 Sales/Order Entry

800-234-8731 Applications Support

NorthStar Brand:

Sales, Repair, and Application Support:

1675 Delany Rd.

Gurnee, IL. 60031

847-782-5288 Sales/Order Entry Fax

847-782-5277 Applications Support Fax

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800-326-6216 Applications Support

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800-866-6659 Applications Support

Please disregard all phone numbers and addresses in this manual. The phone numbers and address on this page are the correct phone number and addresses to use for sales, repair, and application support.

TIME CONTROL



FEATURES

Feature 03 Rocker Switch Time Range Selection

Feature 03 provides the capability to select desired time ranges through the relative position of ten DIP rocker switches. The rocker switch package is located to the immediate left of the wire used to select start mode, directly below terminal posts 1 and 2.

Use the Time Range Selection Chart below to properly position each switch to achieve the desired time range.

Since the time range may be easily altered, the unit is provided with a dial calibrated in percentage rather than actual time. Therefore, the dial calibration is not affected by time range selection.

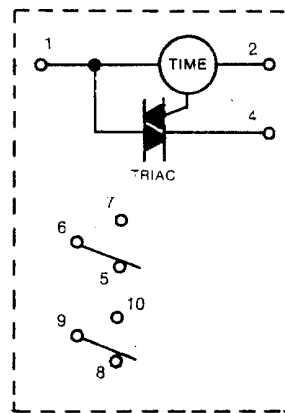
"ON" Time First Programming

The standard CA series timer starts a timing cycle with its "OFF" time period. The initial activation of the output contacts is delayed to the beginning of the subsequent "ON" period. The timer alternates OFF-ON periods thereafter.

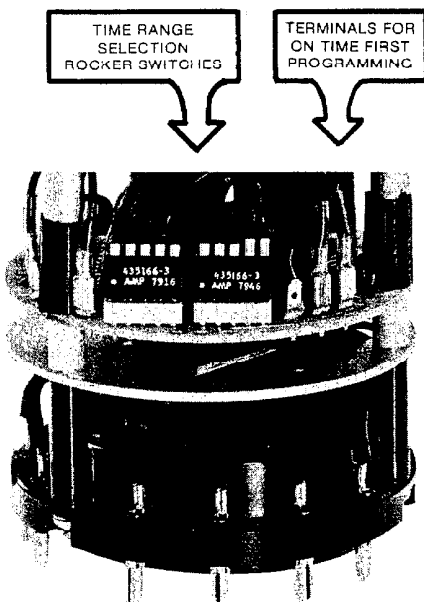
The CA can be programmed to start its cycle in the "ON" time mode. The output contacts actuate as soon as power is applied to the control input, and de-actuate at the beginning of the subsequent "OFF" period. The timer alternates ON-OFF periods thereafter.

The placement of a single internal wire determines the timer start mode. Position the timer as shown in the photo and note the quick disconnect terminals to the right of the rocker switches. Standard "OFF" time first has a wire on the center terminal. Move this wire to the left terminal for "ON" time first.

TERMINAL ASSIGNMENTS



NOTE: Relay contacts and triac available on standard unit.



TIME RANGE SELECTION CHART — ROCKER SWITCH CONDITION

Catalog Symbol	Dial Range	ON TIME										OFF TIME									
		LEFT SWITCH					RIGHT SWITCH					LEFT SWITCH					RIGHT SWITCH				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
25	.5 Sec	0	●	0	●						●					0	●	0	●	●	
26	1 Sec	●	0	0	●						●					●	0	0	●	●	
27	2 Sec	0	0	0	●						●					0	0	0	●	●	
30	3.6 Sec	●	●	●	●						0					●	●	●	●	0	
31	7.5 Sec	0	●	●	●						0					0	●	●	●	0	
32	15 Sec	●	0	●	●						0					●	0	●	●	0	
33	30 Sec	0	0	●	●						0					0	0	●	●	0	
34	60 Sec	●	●	0	●						0					●	●	0	●	0	
35	120 Sec	0	●	0	●						0					0	●	0	●	0	
36	4 Min	●	0	0	●						0					●	0	0	●	0	
37	8 Min	0	0	0	●						0					0	0	0	●	0	
40	15 Min	●	●	●	0						0					●	●	●	0	0	
41	30 Min	0	●	●	0						0					0	●	●	0	0	
42	60 Min	●	0	●	0						0					●	0	●	0	0	
43	120 Min	0	0	●	0						0					0	0	●	0	0	
44	4 Hrs	●	●	0	0						0					●	●	0	0	0	
45	8 Hrs	0	●	0	0						0					0	●	0	0	0	
46	15 Hrs	●	0	0	0						0					●	0	0	0	0	
47	30 Hrs	0	0	0	0						0					0	0	0	0	0	

0 = Switch OFF

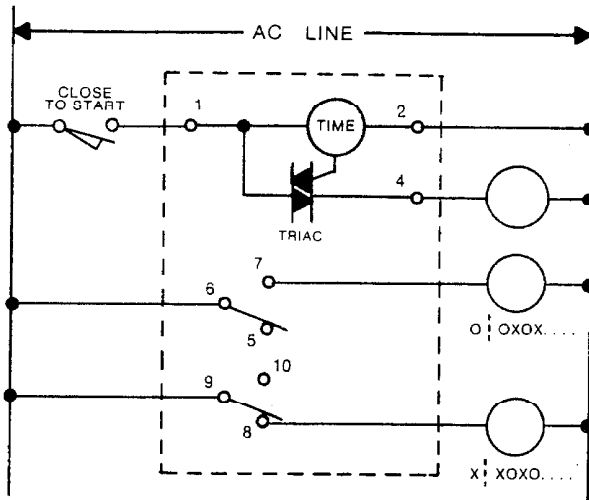
● = Switch ON

TIME CONTROL

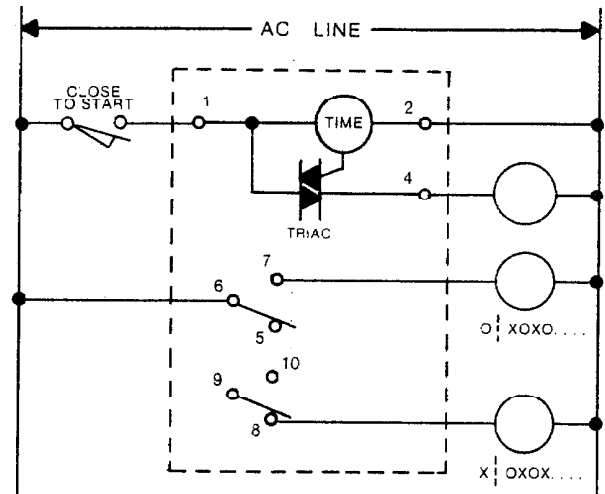


WIRING DIAGRAMS

CA



Off-Time First - Close control switch to begin timing cycle. Output contacts transfer after OFF timing period.



On Time First - Close control switch to begin timing cycle. Output contacts transfer as soon as control input closes.

OUTPUT SEQUENCES

The CA series repeat cycle timer has two operational conditions; RESET (control input open) and TIMING (control input closed). During TIMING, the unit is alternately timing OFF and ON periods as determined by the dial settings.

The output sequences shown with the wiring diagrams in this bulletin indicate the condition of the load in both RESET and TIMING and are separated by a dashed line. O indicates load OFF; X indicates load ON.

For standard OFF-TIME-FIRST timers, the contacts or triac will remain in the reset condition during the first timing period (OFF-time).

For ON-TIME-FIRST timers, the contacts or triac actuate during the first timing period.

There are four output sequences relative to RESET and TIMING which are available by properly programming and load wiring the CA timer. Determine your sequence and select the correct timer feature and program/load configuration from the selection chart.

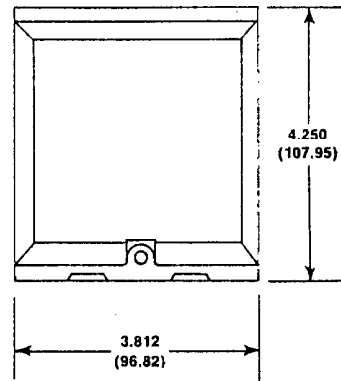
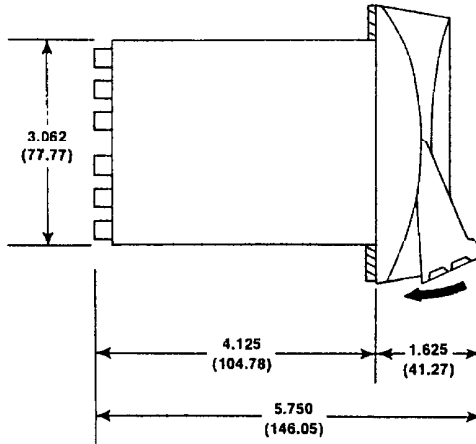
SELECTION CHART

SEQUENCE REQUIRED		TIMER START MODE	LOAD CONNECTION
RESET	TIMING		RELAY
O	OXOX ...	OFF Time First	Normally Open Contacts
O	XOXO ...	ON Time First	Normally Open Contacts
X	OXOX ...	ON Time First	Normally Closed Contacts
X	XOXO ...	OFF Time First	Normally Closed Contacts

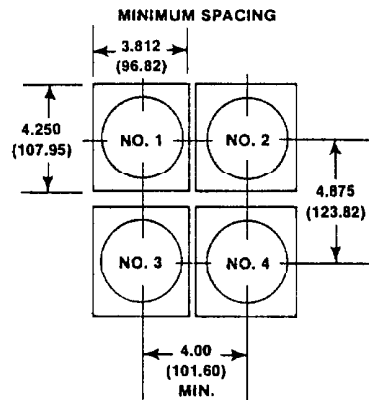
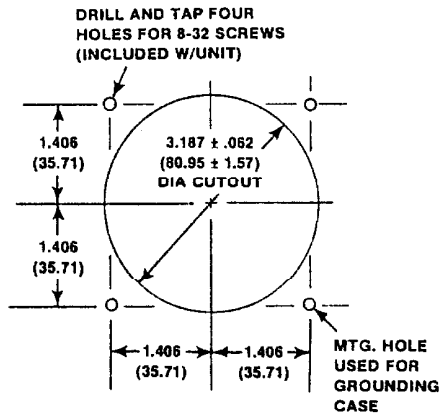
TIME CONTROL



MOUNTING DIMENSIONS



XX = INCHES
(XX) = MILLIMETERS



ORDERING INFORMATION

TIME RANGES

OFF Time Catalog Symbol*	CA
ON Time Catalog Symbol*	25

*The 25 Time Range is standard. The CA is field programmable for the other time ranges.

VOLTAGE/FREQUENCY

SYMBOL	DESCRIPTION
A6	120 VAC 50/60 Hz

FEATURES

SYMBOL	DESCRIPTION
03	Rocker Switch - Time Range Selection With Percentage Dial