Motor-Driven Analog Reset Timer

Noted for its circuit flexibility, the **305E** also provides the highest accuracy among analog timers. Available for either ON-Delay or OFF-Delay operation.

The 305E provides delay, interval or pulse timing function for up to 7 load circuits through two instantaneous and two delayed switches. It features a plug-in design and cycle progress indication.

HIGHEST ACCURACY: Because of its exclusive infinite engagement clutch, the 305 has a repeat accuracy of 0.2%, highest of any timer in its class.

PLUG-IN AND DUST-TIGHT DESIGN: By virtue of its true plug-in design, the body of a 305E can be replaced in seconds without disturbing the housing or disconnecting the wiring. Its gasketed dial assembly forms a dust-tight seal against the housing, whether panel or surface-mounted.

FASTEST RESET: All 305 timers reset to a full-scale setting within 0.1 second, proportionately faster for shorter settings.

CIRCUIT FLEXIBILITY: All the contacts of its two instantaneous and two delayed load switches are externally accessible at a 14 point terminal block.

LONGEST LIFE: With an average mechanical life expectancy of over 5,000,000 operations before the first failure, the 305E is the leader in its class.

PILOT LIGHT: A built-in pilot light indicates that the timer is running.

OPERATION

The 305E is a synchronous motor-driven timer with an electrically-operated clutch equipped either for ON-Delay or OFF-Delay operation.

ON-DELAY: When power is applied (start signal on), the clutch solenoid is energized. Two things happen immediately and simultaneously, the instantaneous switches transfer from one set of contacts to the other, and the motor begins to drive the cycle progress pointer toward zero.

At the end of the timed period, the pointer trips one of the delayed switches, a brief time later (about 1/2% of full scale), the other delayed switch is tripped, stopping the timer motor but leaving the clutch engaged. The timer does not reset until power to the clutch is removed.

OFF-DELAY: Timing starts when power is removed (start signal off), from the spring-loaded, normally engaged clutch. The timer is reset when power is restored to the clutch solenoid; simultaneously, the instantaneous contacts are tripped. Action of the delayed contacts is the same as with ON-Delay timers. A power outage stops the motor but does not reset the OFF-Delay 305E.

		ON DELAY			
		Timing Sequence**			
SWITCH	CONTACTS	Before Start	During Cycle	*	End of Cycle
Instantaneous	14-9/6-8				
	14-10/6-7				
Delayed (D_2)	11-12				
	11-13				
Delayed (D_1)	4-5				
	4-3				

*D2 trips approximately 1/2% of range after end of cycle.
** Assumes a sustained closed start signal (i.e. longer than the dial set time).

		OFF DELAY			
		Timing Sequence**			
SWITCH	CONTACTS	Before Start	During Cycle	*	End of Cycle
Instantaneous	14-9/6-8				
	14-10/6-7				
Delayed (D_2)	11-12				
	11-13				
Delayed (D_1)	4-5				
	4-3				

*D_2 trips approximately 1/2% of range after end of cycle.
** Assumes a sustained open start signal (i.e. longer than the dial set time).
Shown power on.

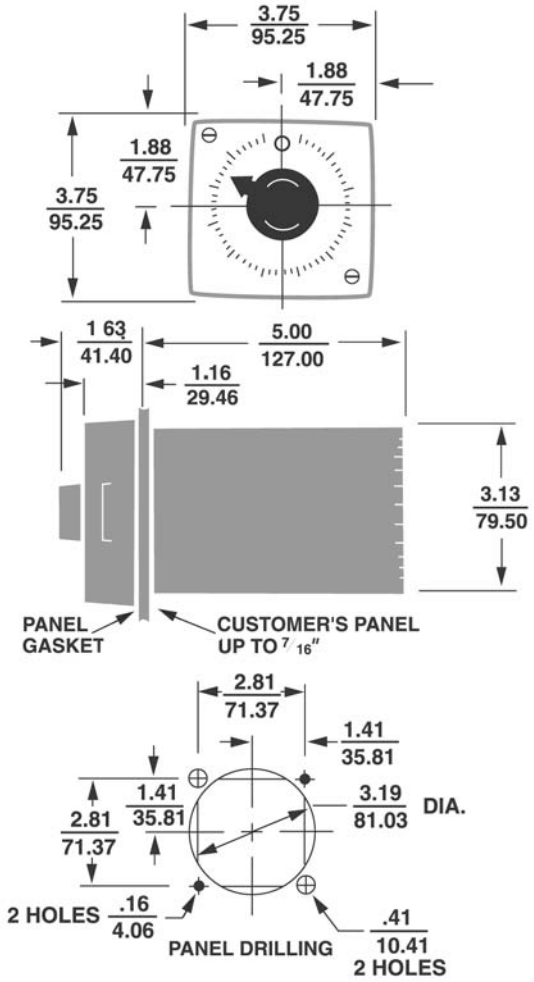
BLACK—Circuit Closed

GRAY—Circuit Open

SPECIFICATIONS

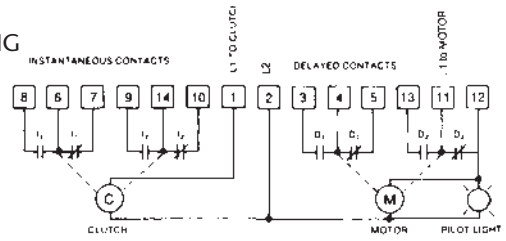
MODELS	ON-Delay
	OFF-Delay
RANGES (AC)	16 standard ranges, from 6 SEC to 60 HRS at 60 Hz (7 SEC to 70 HRS at 50 Hz) other ranges on special order.
REPEAT ACCURACY	AC MODELS: ± 0.2% of full scale (For ranges of 60 SEC or less, it may be necessary to run timer motor before start to achieve related accuracy)
	DC MODELS: ± 1.75% of full scale at constant ambient temperature and ± 15% voltage variation (48, 125 and 250V models); ± 3.5% of full scale at constant voltage and 32 to 120°F ambient temperature variations (all models).
RESET TIME	0.1 SEC, full scale
MIN. SETTING	1/60th of range (all models except 0.3 SEC for 6 SEC model)
DIAL DIVISIONS	6 SEC, 60 SEC, 120 SEC, 240 SEC, 6 MIN, 60 MIN, 120 MIN, 240 MIN, 6 HR, and 60 HR — 120 Dial Divisions
	15 SEC, 30 SEC, 15 MIN, 30 MIN, 15 HR., and 30 HR — 150 Dial Divisions
LIFE EXPECTANCY	MECHANICAL: over 5,000,000 operations
	CONTACTS: 3,000,000 operations under resistive or inductive load of 1A
TIMING MOTOR	Synchronous, permanently lubricated
TIMING MODES	Single cycle interval or delay
LOAD SWITCHES	INSTANTANEOUS: two, each SPDT; self-cleaning, heavy-duty silver contacts.
	DELAYED: two, each SPDT; precision type, silver contacts
	CONTACT RATING (non-inductive): 10 amps, 120 VAC 5 amps, 240 VAC 1/4 amp, 115 VDC
PILOT LIGHT	Wired in parallel with motor; standard with all AC and DC models
TERMINALS	14 screw terminals accessible at rear; integral wiring diagram on timer housing (On DC timers, terminal 10 is not available for load circuit use on units rated 48 VDC or higher)
HOUSING	Plug-in design; completely gasketed, dust-tight when surface or panel-mounted
POWER REQUIREMENTS	AC MODELS: 120 or 240V, 50/60 Hz (all ranges), (± 10%, - 10%)
	DC MODELS: 48, 125 or 250V with zener regulations; 28V without zener regulation.
	AC MODELS: running current–0.128 A (115 VAC) inrush current–0.628 A (115 VAC)
TEMPERATURE RATING	32° to 140°F (0 to 60°C)
WEIGHT	NET: 2 lb., 6 oz. SHIPPING: 2 lb., 12 oz.
MOUNTING ACCESSORIES	STANDARD: Hardware is provided to mount timer so that it is dust-tight from front of panel.
	OPTIONAL: Surface mounting with front or rear-facing terminals. NEMA 12 (See Accessories)

DIMENSIONS (INCHES/MILLIMETERS)

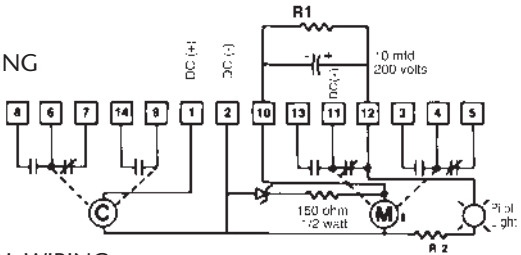


WIRING

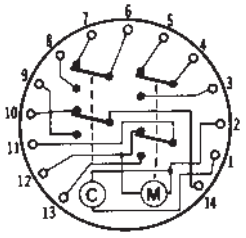
AC WIRING



DC WIRING



TERMINAL WIRING



UNIT RATING	RESISTOR VALUES	
DC VOLTS	R1	R2
48	800	500
125	4K	30K
250	10K	150K

CAUTION! Power for motor must be jumped from Terminal 1 to 11. Do NOT apply power to Terminal 12.

	Basic Type	Range	Voltage Frequency	Arrange-ment	Setting	Features	
MODEL NUMBER >>	305E						

Arrangement		
On-delay (reset on power interruption)	1	
Off-delay (non-reset on power interruption)	2	
Special	0	
Setting		
Knob	0	
Key	5	
Features		
Basic, standard plug-in		P
Non plug-in timer		X
Basic standard unit		X
Special		K

Accessories:	
0305-265-65-00	Surface mounting assembly with front facing terminals, less timer (for AC timers and 28 VDC timers only)
0305-263-64-00	Surface mounting bracket - rear facing terminals

RANGE-60 CYCLES–120 VAC	
6 SEC	101
15 SEC	004
30 SEC	006
60 SEC	007
120 SEC	008
240 SEC	011
6 MIN	029
10 MIN	014
15 MIN	015
30 MIN	016
60 MIN	017
120 MIN	018
240 MIN	019
6 HR	030
15 HR	021
30 HR	022
60 HR	023
RANGE-50 CYCLES–120 VAC	
7 SEC	441
18 SEC	071
35 SEC	165
70 SEC	166
140 SEC	167
280 SEC	157
7 MIN	168
18 MIN	049
35 MIN	169
70 MIN	170
140 MIN	171
280 MIN	160
7 HR	164
18 HR	161
35 HR	162
70 HR	163
RANGE - DC UNITS	
60 SEC	007
120 SEC	008
240 SEC	011
15 MIN	015
120 MIN	018
240 MIN	019
Special	000

Voltage Frequency	
120/60	A
240/60	B
120/50	C
240/50	D
28 VDC	H
48 VDC	J
125 VDC	L
250 VDC	M
Special	K

TYPICAL INSTALLATIONS

- C CLUTCH SOLENOID
- M MOTOR
- INDEPENDENT LOADS
- DEPENDENT LOADS
- MOMENTARY STARTING CONTACT
- SUSTAINED STARTING CONTACT
- LOAD ENERGIZED
- LOAD DE-ENERGIZED

All timers shown in "before start" position. Diagrams shown with power off unless otherwise marked.

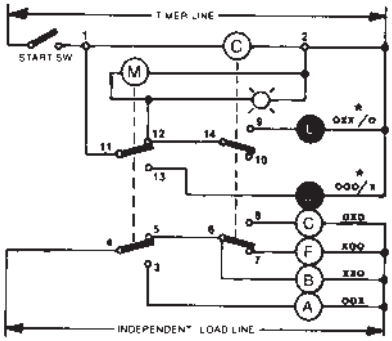
Maximum load current through any load carrying contact is 10 amperes.
ON DELAY–Reset on power failure.

OFF DELay–Non-reset on power failure.

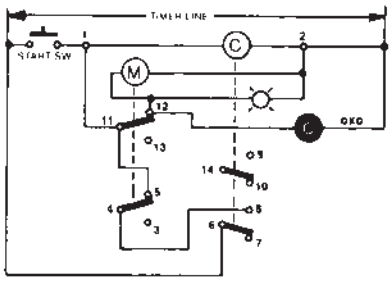
M DELAYED CONTACTS
Switch 4-5-3 transfers at dial "0". Switch 11-12-13 transfers 1% later.

C INSTANTANEOUS CONTACTS
Contacts are transferred when clutch is energized; transferred back, as shown when de-energized.

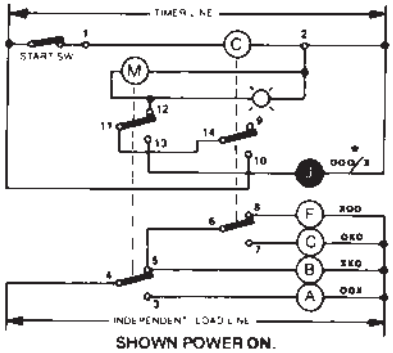
SUSTAINED START (ON DELAY)



MOMENTARY START (ON DELAY)



OFF DELAY



SHOWN POWER ON.