



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.

SWITCH	CONTACTS	ON DELAY			
		Timing Sequence**			
		Before Start	During Cycle	*	End of Cycle
Instantaneous	14-9/6-8	BLACK	GRAY	GRAY	GRAY
	14-10/6-7	GRAY	BLACK	BLACK	BLACK
Delayed (D ₂)	11-12	BLACK	GRAY	GRAY	GRAY
	11-13	GRAY	BLACK	BLACK	BLACK
Delayed (D ₁)	4-5	BLACK	GRAY	GRAY	GRAY
	4-3	GRAY	BLACK	BLACK	BLACK

*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).

SWITCH	CONTACTS	OFF DELAY			
		Timing Sequence**			
		Before Start	During Cycle	*	End of Cycle
Instantaneous	14-9/6-8	BLACK	GRAY	GRAY	GRAY
	14-10/6-7	GRAY	BLACK	BLACK	BLACK
Delayed (D ₂)	11-12	BLACK	GRAY	GRAY	GRAY
	11-13	GRAY	BLACK	BLACK	BLACK
Delayed (D ₁)	4-5	BLACK	GRAY	GRAY	GRAY
	4-3	GRAY	BLACK	BLACK	BLACK

*D₂ 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

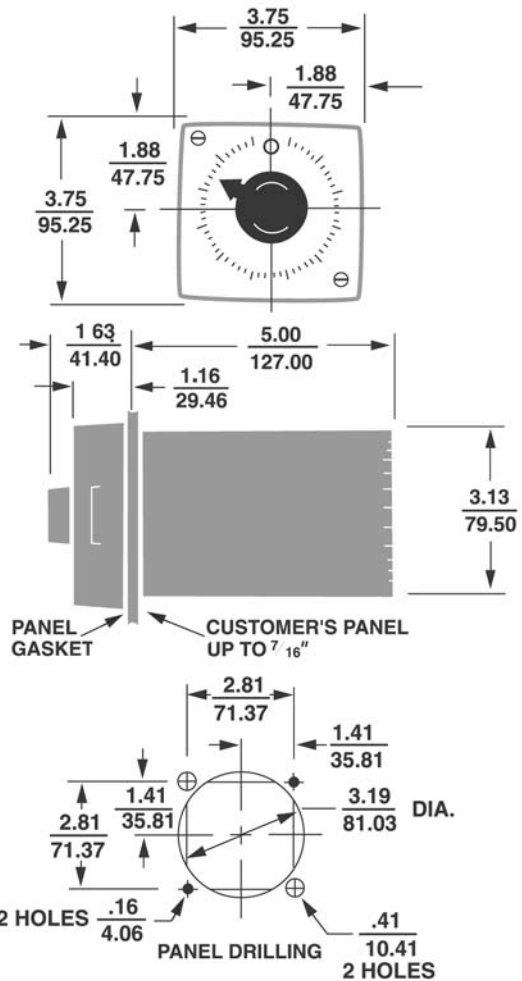
GRAY—Circuit Open

Electromechanical Timer // 305E Series

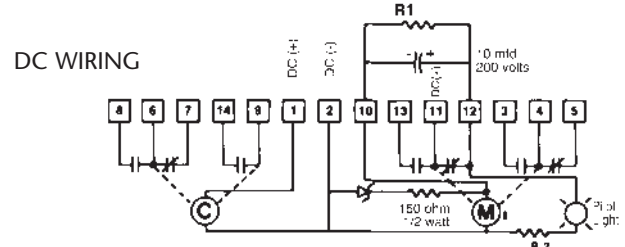
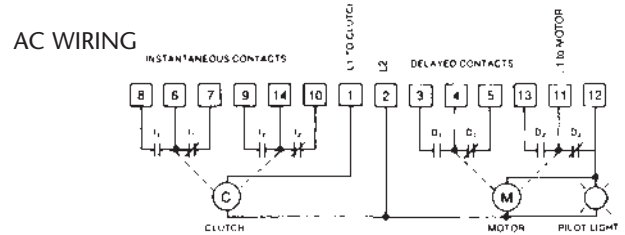
SPECIFICATIONS

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: $\pm 0.2\%$ 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: $\pm 1.75\%$ of full scale at constant ambient temperature and $\pm 15\%$ voltage variation (48, 125 and 250V models); $\pm 3.5\%$ 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), ($\pm 10\%$, - 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)

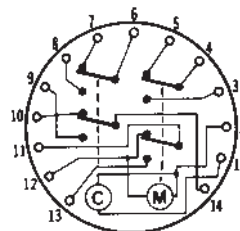
DIMENSIONS (INCHES/MILLIMETERS)



WIRING



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.



Motor-Driven Cycle Progress Timer

A Dial-Adjustable TDR with cycle progress indication, the ATC 322B can also be used as a low-cost automatic reset timer for a wide range of interval, delay and pulse timing functions, in either ON-delay or OFF-delay operation.

PRICE/PERFORMANCE VALUE: Although it is priced like a TDR, the 322B provides the versatile timing functions and features of much more expensive automatic reset timers.

INSTANTANEOUS AND DELAYED LOAD SWITCHES: Because the standard 322B includes an instantaneous switch as well as two delayed switches, it can be used in the On-Delay mode for interval and/or delayed control, with either a momentary or sustained start signal. All three switches are mounted on a sliding deck which facilitates replacement and maintenance.

SURFACE OR FLUSH MOUNT: The 322B is provided with hardware for surface mounting or, if desired, flush mounting through a single 15/16" OD cutout in a 1/8" panel.

CYCLE PROGRESS INDICATION: A pointer in the dial knob rotates during the cycle, continuously showing the time remaining until time-out.

SPECIFICATIONS

MODEL	Choice of ON-Delay or OFF-Delay operation (not field-convertible)	
RANGES	12 standard ranges, from 5 SEC to 5 HRS at 60Hz (6 SEC to 6 HRS at 50 Hz)	
REPEAT ACCURACY	± 2% of dial range.	
RESET TIME	150 ms.	
MIN. SETTING	5% of dial range.	
LIFE EXPECTANCY	MECHANICAL: 2,500,000 cycles (average) CONTACTS: 2,500,000 operations under resistive or inductive load of 1A	
TIMING MODES	SINGLE CYCLE: interval, delay or pulse.	
LOAD SWITCHES	INSTANTANEOUS: one, SPDT, precision type. DELAYED: two, SPDT, precision type. CONTACT RATINGS (non-inductive): 10 A at 120 VAC 5 A at 240V AC	
TERMINALS	11-point terminal block on side of housing; all terminals accept .250" push-on connectors. Terminals 1, 2, 4, 9 and 11 are split connectors for use with either one .250" or two .110" push-on connectors.	
POWER REQUIREMENTS	Running Current	121 mA (14.5 VA) at 120V
	Inrush Current	157 mA (18.9 VA) at 120V
TEMPERATURE RATING	32° to 120°F (0 to 50°C)	
WEIGHT	NET: 1 lb. 8 oz.	SHIPPING: 2 lbs.

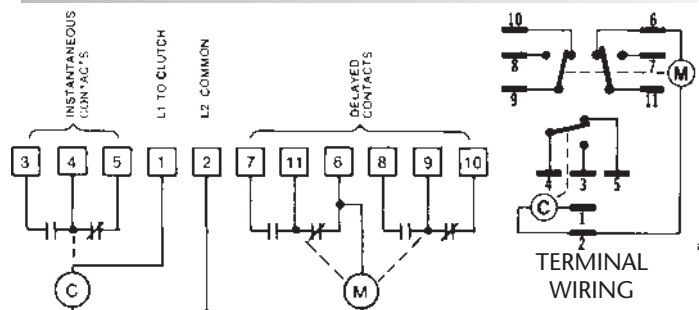
OPERATION

The 322B 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 sustained on), the clutch engages, the motor begins to drive a cam toward its zero position, and the instantaneous switch transfers from one set of contacts to the other. At the end of the timed period, the cam trips one of the delayed switches, but the motor continues to run. A brief time later (about 2-1/2% to 5% of full scale), the cam trips the second delayed switch, stopping the motor but leaving the clutch engaged. The 322B resets when power is removed from the clutch.

OFF-DELAY: Timing begins when power is removed (start signal off) from the spring-loaded, normally-engaged clutch. The timer resets when power is restored to the clutch, thus disengaging it and transferring the instantaneous switch from one set of contacts to the other. Action of the delayed contacts is the same as with the On-Delay timer. A power outage stops the motor but does not reset the Off-Delay 322B; the timer completes the interrupted cycle when power is restored.

WIRING



RANGE - 60Hz- 120 V		Voltage Frequency		MODEL NUMBER >>>>	Basic Type	Range	Voltage Frequency	Arrangement	Switch Diff.	Features
5 SEC	114	120/60	A	322B				On-delay (reset on power interruption)	1	
10 SEC	003	240/60	B					Off-delay (non-reset on power interruption)	2	
20 SEC	005							Switch Differential		
40 SEC	115							2-1/2%-5% of dial range		2
60 SEC	007							Special	0	
150 SEC	009							Features		
5 MIN	012							Standard surface mounting unit, clutch contact		CS
10 MIN	014							Special		CK
20 MIN	050									
40 MIN	056									
60 MIN	017									
5 HR	113									
RANGE - 50Hz - 120 V		120/50	C							
6 SEC	101	240/50	D							
12 SEC	116	Special	K							
24 SEC	117									
48 SEC	118									
72 SEC	073									
180 SEC	119									
6 MIN	029									
12 MIN	047									
24 MIN	052									
48 MIN	058									
72 MIN	061									
6 HR	030									
Special	000									

BLACK—Circuit Closed GRAY—Circuit Open

SWITCH	CONTACTS	ON DELAY			
		Timing Sequence**			
		Before Start	During Cycle	*	End of Cycle
Instantaneous	4-3	Black	Black	Black	Black
	4-5	Black	Black	Black	Black
Delayed (D ₂)	11-6	Black	Black	Black	Black
	11-7	Black	Black	Black	Black
Delayed (D ₁)	9-10	Black	Black	Black	Black
	9-8	Black	Black	Black	Black

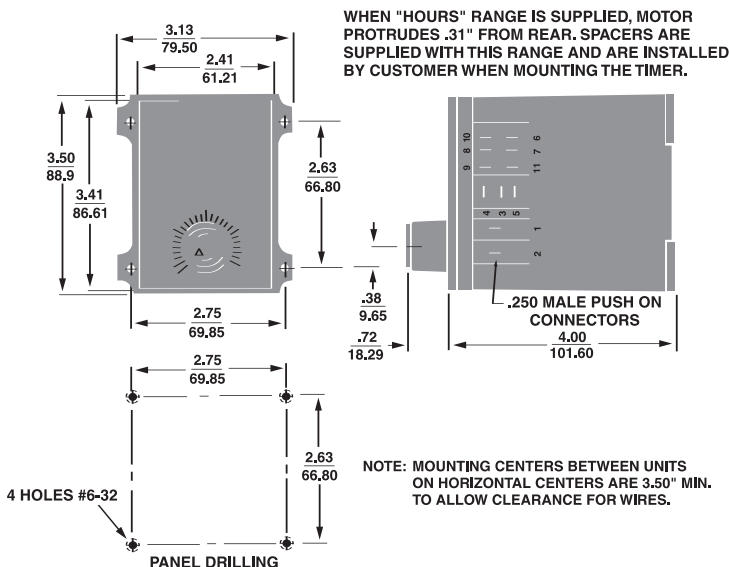
*D₂ trips approximately 2-1/2% of range after end of cycle.
** Assumes a sustained closed start signal (i.e. longer than the dial set time).

SWITCH	CONTACTS	OFF DELAY			
		Timing Sequence**			
		Before Start	During Cycle	*	End of Cycle
Instantaneous	4-3	Black	Black	Black	Black
	4-5	Black	Black	Black	Black
Delayed (D ₂)	11-6	Black	Black	Black	Black
	11-7	Black	Black	Black	Black
Delayed (D ₁)	9-10	Black	Black	Black	Black
	9-8	Black	Black	Black	Black

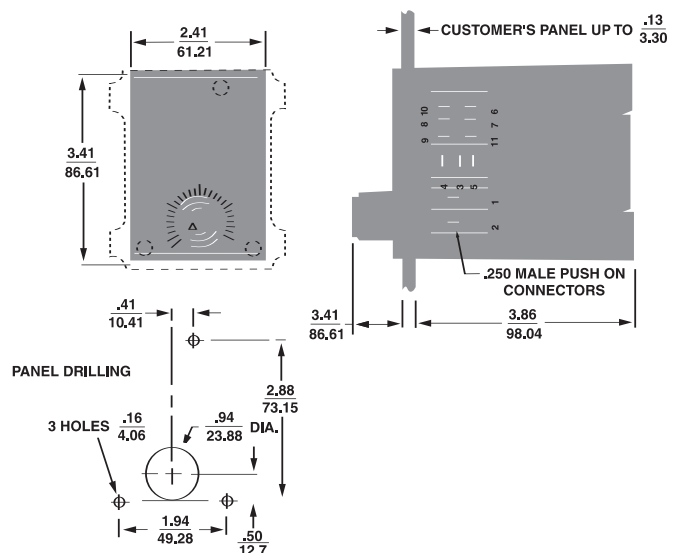
*D₂ trips approximately 2-1/2% to 5% of range after end of cycle.
** Assumes a sustained open start signal (i.e. longer than the dial set time).

/// DIMENSIONS (INCHES/MILLIMETERS)

SURFACE MOUNTING OF TIMER



FLUSH MOUNTING OF TIMER





OPERATION

The pointer is manually set to the desired time. At the instant the knob is turned from zero, the switch MS closes and load A is energized. After the set time has elapsed, the load is de-energized and the timer stops at zero. There is a terminal connection, (terminal 4) load B, for an end of cycle light and/or audible signal. A toggle switch can be furnished as added equipment which allows setting of the time before actuating the load. This provides a means of more accurate time settings. This toggle switch (time start and signal stop) will also turn off the end of cycle signal.

APPLICATIONS: Designed to control an electrical circuit for a set time upon operation of the manual setting knob which is directly connected to the switch operating cam. To assure positive setting action, this timer does not set through a clutch. Calibrated dial settings are available in ranges from 1 minute to 24 hours. Designed for control of any electrically operated equipment or operation, such as *processing machinery, plastic molding, laundry and dry cleaning machinery, electric ovens and furnaces, photographic equipment*, or wherever accurately timed control of electrical operation is critical.

Interval Timer

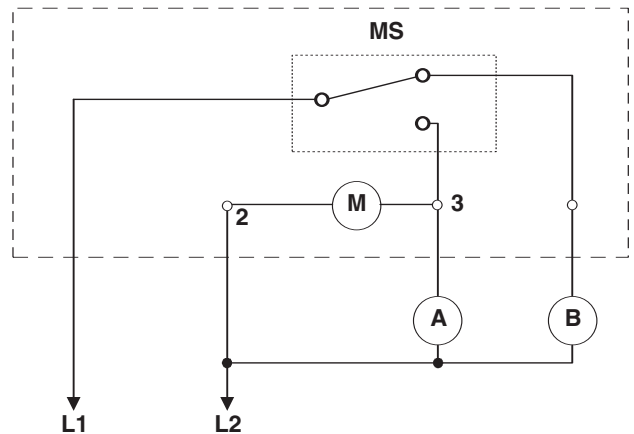
SPECIFICATIONS

TIME RANGES	30, 60 MIN 5, 24 HR
TIMING MODE	Interval
SETTING ACCURACY	Within 0.5% of Full Scale
OUTPUT	SPDT, 15A, 240 VAC Resistive
MOTOR VOLTAGES	120 VAC, 240 VAC, 60 Hz.
DISPLAY	Dial
TEMPERATURE RATING	32° to 120°F (0° to 50°C)
TERMINATION	Rear Terminal Block-Screw
MOUNTING	400 Series: Front Panel
WEIGHT	1.30 lbs.

DIMENSIONS (INCHES/MILLIMETERS)

Series	H	W	D*	WT
400	4-1/2"	2-7/8"	2-1/4"	1-1/4 lbs.
*Add 3/4" for knob.				

WIRING



Interval Timer // 400 Series

MODEL NUMBER >>>>>>	4		
Basic Type: Open Unit	4		
	Range		
	0-30 MIN	06	
	0-60 MIN	07	
	0-5 HRS	09	
	Voltage & Frequency		
	120 VAC, 60 Hz	A	
	240 VAC, 60 Hz	C	