A versatile dial-adjustable time delay relay, the ATC 328 provides a choice of ON-delay, OFF-delay or interval operation for any timing period between 50 mSEC and 10 hours–all in the same timer. Based on a unique digital circuit, it features cycle progress annunciation and is suitable for the most demanding industrial service.

DESIGNED FOR INDUSTRIAL SERVICE: With a load relay that is rated for 100,000,000 mechanical operations, and power supply that protects circuit components against the voltage transients that are typical of industrial plants, the 328 has a long life expectancy even in tough environments.

CYCLE PROGRESS INDICATION: The 328's LED annunciator provides a unique and extremely effective method of cycle progress indication. Off before timing, the LED blinks at an ever-increasing rate as the cycle progresses: once every 3-1/2 seconds during the first 10% of the cycle, twice during the second 10%,and so on. At time-out, the LED stays on constantly, pulsing at a high rate.(In the 1 and 10-second ranges, the LED is off before timing, steady on during timing, and pulsing on after time-out.)

VERSATILE MOUNTING: The standard 328 has an 11-pin base which accepts push-on connectors or plugs into a surface-mounted socket. Since all connections are made to the socket, the 328 is readily removed without disturbing the wiring. It is also available with an optional quick-connect plug and brackets for flush panel-mounting.

MULTIPLE RANGES REDUCES INVENTORY: Because the 328 has six switch-selected ranges–from 1 SEC to 10 hours–each timer can provide any dial-adjustable timing period between 50 ms and 10 hours—thus greatly reducing inventory requirements especially for large users. The range selector switch knob can be easily removed to prevent unauthorized range change.

HIGH ACCURACY: The 328's digital circuit maintains rated accuracy from cycle to cycle, regardless of reset time. Its oscillator-based circuit is also effectively compensated for changes in temperature and voltage and thus achieves excellent overall accuracy.

VERSATILE CONTROL CAPABILITY: Every 328 can be used for either ON-Delay, OFF-Delay or interval operation, depending on how its terminal block is wired.

OPERATIONS

Control action of the 328 depends on how its terminal block is wired (see Wiring diagrams.)

In **ON-DELAY OPERATION**, timing begins when the start switch is closed. The load relay contacts transfer at the end of the timed period. Reset occurs when the start switch is opened or when there is a power interruption.

In **OFF-DELAY OPERATION**, timing begins when the start switch is opened. The load relay contacts transfer at the end of the timed period and back again at reset. Reset occurs when the start switch is closed. Control action of all loads is delayed, either closed-closed-open or open-open-closed.

In **INTERVAL CONTROL**, timing begins when the start switch is closed. The load relay contacts transfer at the beginning and at the end of the timed period, thus providing true interval control, either open-closed-open or closed-open-closed. The start signal may be either sustained or momentary; in the latter case, the start signal is "latched in" by wiring it to one of the load relay's two sets of contacts. Power interruption resets the timer.

E48329

APPROVED



Multi-Range Timer

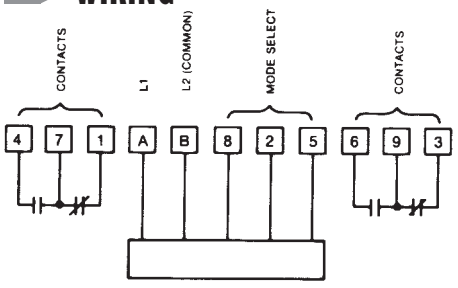
MODEL NUMBER

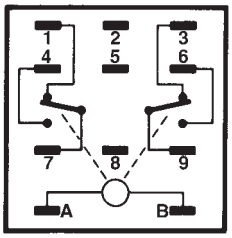
MODEL NUMBER	328E	200	F		
RANGE Six Knob Selectable Ranges (1 or 10 SEC/MIN/HRS)		200			
VOLTAGE & FREQUENCY 24 VAC to 240 VAC and 24 VDC			F		
ARRANGEMENT					
Reset on power failure				10	
Special, use K in features				00	
FEATURES					
Standard					XX
Special					XK

ACCESSORIES

DIN/Surface Mount Socket with hold down clips	000-825-89-99
DIN/Surface Mount Socket	000-825-89-00
Panel Mounting Plug-In Socket	328-260-01-00
Panel Mounting Kit Consisting of Gasket and 2 Clamps	328-260-02-00

WIRING





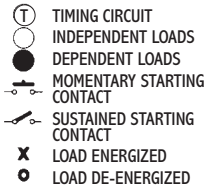
TERMINAL WIRING

The 328E Replaces 328A, 328B, 328C, 328D

SPECIFICATIONS

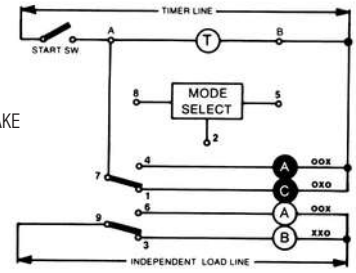
MODELS	One model provides all ranges and control modes. 328E200F10XX	
RANGE	Six switch-selected ranges:	
	1 SEC	
	10 SEC	
	1 MIN	
	10 MIN	
	1 HR	
	10 HR	
MINIMUM SETTING	2% of range, except 50 ms on 1 SEC range.	
LOAD RELAY	TYPE	DPDT
	LIFE	100,000,000 operations (no load)
	CONTACT RATING	AC: 10 A (resistive) at 125-250V.1/8 HP DC: 10A at 30 VDC.
TEMPERATURE RATING	0° to 140° F (-18°C to 60°C)	
MOUNTING	11 blade case plugs into matching socket with 11 screw terminals; blades also accept 0.187" push-on connectors.	
	OPTIONAL: kit provides 11-pin plug-in socket and 2 brackets for flush panel mounting.	
POWER REQUIREMENTS	24 VAC to 240 VAC and 24 VDC	
	AC	(+10%,-20%) 50/60Hz
	DC	(+20%,-20%)
	Maximum Ripple @ 100 Hz -5%	
SETTING ACCURACY	10% of range	
REPEAT ACCURACY	Varies with changes in line voltage and ambient temperature but not with reset time: ±0.5% of setting or 15 mSEC over the entire voltage and temperature range.	
TIMING MODES	ON-Delay/OFF-Delay/Interval	
INDICATOR	Timing LED	
RESET TIME	ON-DELAY	100 mSEC max.
	OFF-DELAY	50 mSEC max.
	INTERVAL	100 mSEC max.
HOUSING	Plug-in design; dust, moisture and impact-resistant molded plastic case. DIN size (48mm x 96mm)	
WEIGHT	NET: 7 oz.	SHIPPING: 1 lb.

TYPICAL INSTALLATIONS

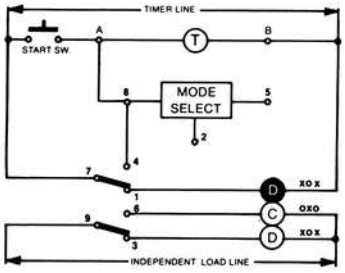


All timers shown in "before start" position. Diagrams shown with power off unless otherwise marked. Maximum load current through any load carrying contact is 10 amperes.

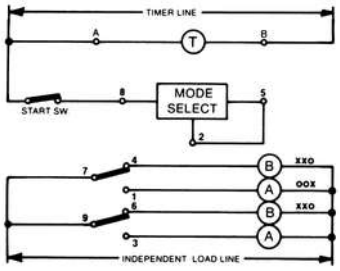
DELAY-ON-MAKE



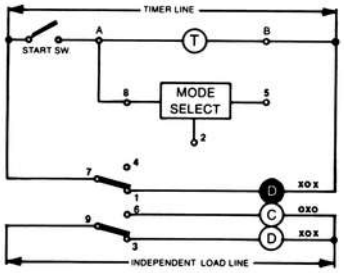
ONE-SHOT



OFF-DELAY (SHOWN WITH POWER ON)



INTERVAL



DIMENSIONS (INCHES/MILLIMETERS)

