

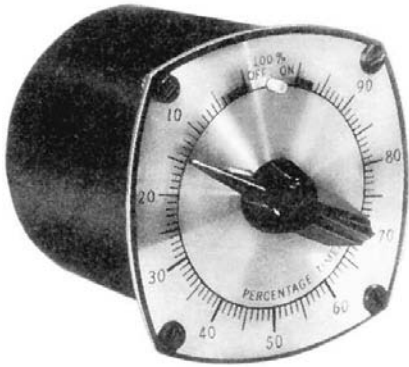
# Automation



TIME

PROTECTION

CONTROL



Percentage Timer

- Precise Fool-proof Operating Mechanism
- Eliminates All Engaging Cams and Latches
- Five Time Ranges From Which to Choose
- Minimal Panel Space Needed

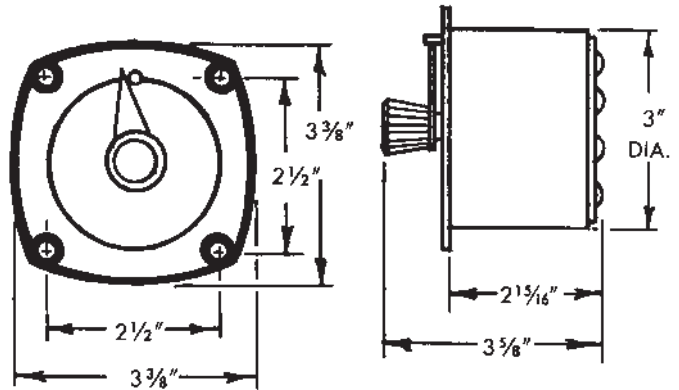
For continuous ON-OFF control of electrical circuits, the CP Series single circuit repeat cycle timer is a continuous cycling control where the ON or circuit closure time is dial adjusted for a percentage of the total time cycle.

**APPLICATIONS:** Control of pumps, blowers, filters, heating equipment, industrial ovens, laboratory equipment and wherever ON or OFF control is desired as a percentage of the primary fixed total time cycle.

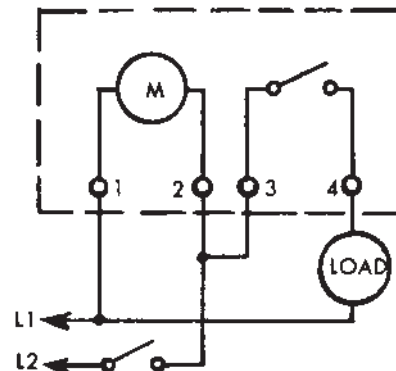
SPECIFICATIONS

TIME RANGES	30, 60 SEC 15, 30, 60 MIN
TIMING MODE	Continuous ON-OFF
RANGE SETTING	3%-97%, Also 100% ON and OFF Points
SETTING ACCURACY	Within 2% of Full Scale
REPEAT ACCURACY	Within 1% of Full Scale
OUTPUT	SPST, 15A, 25 VAC Resistive
MOTOR VOLTAGES	120 VAC 50/60 Hz., 240 VAC, 50/60 Hz. (50 Hz. Units Will Be 1/6 Slower Than Listed Speeds.)
TERMINATION	Rear Screw Terminals
MOUNTING	Front Panel
TEMPERATURE RATING	32° to 120°F (0° to 50°C)
WEIGHT	1.4 lbs.

DIMENSIONS (INCHES)



WIRING



MODEL NUMBER >>>>>>	CP	
	Time Range	
	30 seconds	30S
	60 seconds	60S
	15 minutes	15M
	30 minutes	30M
	60 minutes	60M
	Voltage	
	120 VAC	A
	240 VAC	C
Model Example: CP-15M-A		

Percentage Timer // CP Series

Easily the most *rugged* and *dependable* of industrial percentage timers, the ATC 304 incorporates heavy-duty contacts that are capable of switching loads as large as 4.6 KW directly.

**LARGE CONTACTS:** Self-cleaning silver contacts are 3/8 inch in diameter, larger than in any other make of percentage timer. They easily provide 1,000,000 operations at the full rated load of 25 A (non plug-in models).

**RUGGED AND TROUBLE-FREE:** Every component of the 304 has been refined and improved over the years to provide dependable operation for at least 3,000,000 cycles. Its classic *simplicity* of design makes it virtually trouble-free.

**CONVENIENT ADJUSTMENT:** Graduated in easily read 1% increments, the 304 provides continuous adjustment of on time between 5 and 95%. It also switches the load off continuously when the pointer is set below 3%; and on continuously, when the pointer is set above 98%.



Percentage Timer

## OPERATION

The 304 is available in a choice of 15, 30 and 60-second time cycles (60 Hz). Its synchronous motor drives a cam which repeatedly closes the SPST load switch for a percentage of the time cycle, as set on the timer dial, and opens it for the remainder of the cycle.

When the dial pointer is set below 3%, the load switch stays open for the full cycle; it remains closed when the pointer is set above 98%. An optional Hold switch also disconnects power to the timer motor when the pointer is set below 3%.

Series 304 timers operate continuously and do not reset on power interruption; when power is restored, they resume the interrupted cycle.

**TYPICAL APPLICATIONS:** Ideal for controlling wattage input to electrically heated equipment, the 304 non-plug-in models can pulse loads up to 4.6 KW directly through the SPST load switch; the plug-in models can switch up to 2.3 KW loads directly.

The 304 can be used with other types of electrical equipment to control the ratio of on time and off time in a fixed time cycle. In many types of ratio and cascade control systems, the 304 provides rate-of-rise set point drive control; special dial calibrations are available for this application.

## SPECIFICATIONS

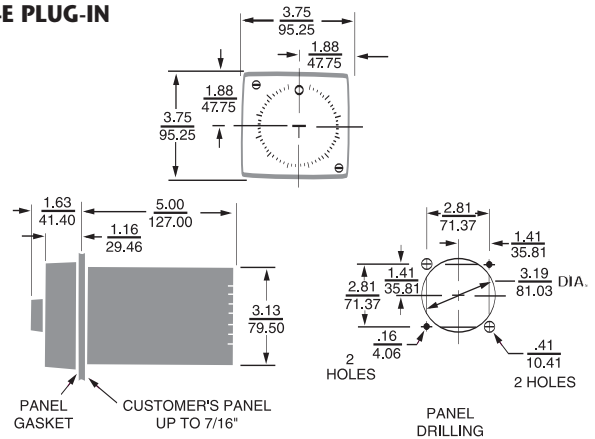
MODELS Choice of three:	304E plug-in 304E non-plug-in 304C non-plug-in	
RANGES Choice of three standard ranges.	15 SEC @ 60 cycles (18 SEC @ 50 cycles) 30 SEC @ 60 cycles (36 SEC @ 50 cycles) 60 SEC @ 60 cycles (72 SEC @ 50 cycles)	
REPEAT ACCURACY	± 0.1%	
DIAL CALIBRATION	5 to 95% on time, in 1% graduations.  FULL ON, FULL OFF FEATURE. When pointer is set below 3%, load switch contacts are open continuously, above 98%, contacts are closed continuously.  HOLD SWITCH (optional). Disconnects power to timer motor when pointer is set below 3%.	
LOAD SWITCH	One SPST (quick make, quick break) switch with self-cleaning heavy-duty silver contacts.	
CONTACT RATINGS (non-inductive)	304C	25A at 120 VAC 20A at 240 VAC
	304E	15A at 120 or 10A at 240V AC—plug-in unit.
	Non-plug-in unit same as 304C	
POWER REQUIREMENTS	120 or 240V, 50/60 Hz; 50 mA running current.	
TERMINALS	4 screw terminals accessible at rear; wiring diagram on housing.	
TEMPERATURE RATING	32° to 120°F (0 to 50°C)	
WEIGHT	NET: 1 lb., 2 oz.	SHIPPING: 1 lb., 7 oz.
MOUNTING ACCESSORIES	OPTIONAL: NEMA 12 case for 304E, both for surface mounting.	

MODEL NUMBER >>>>>	304E				
<b>Range</b>					
15 SEC @ 60 cycles (18 SEC @ 50 cycles)	004				
30 SEC @ 60 cycles (36 SEC @ 50 cycles)	006				
60 SEC @ 60 cycles (72 SEC @ 50 cycles)	007				
Special	000				
<b>Voltage &amp; Frequency</b>					
120/60	A				
240/60	B				
Special	K				
<b>Dial Calibration</b>					
Standard 0 to 100% Dial	00				
Special	99				
<b>Features</b>					
Standard plug-in timer	p				
Standard non-plug-in timer	X				
	Standard	X			
	With hold switch	H			
	Special	K			

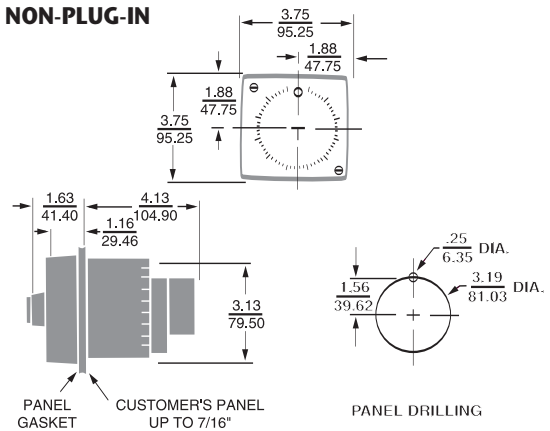
MODEL NUMBER >>>>>	304C				X
<b>Range</b>					
15 SEC @ 60 cycles (18 SEC @ 50 cycles)	004				
30 SEC @ 60 cycles (36 SEC @ 50 cycles)	006				
60 SEC @ 60 cycles (72 SEC @ 50 cycles)	007				
Special	000				
<b>Voltage &amp; Frequency</b>					
120/60	A				
240/60	B				
Special	K				
<b>Dial Calibration</b>					
Standard 0 to 100% Dial	00				
Special	99				
<b>Features</b>					
Metal Dial	X				
Standard Unit/Non-plug-in	X				
With hold switch	H				
Special	K				

## DIMENSIONS (INCHES/MILLIMETERS)

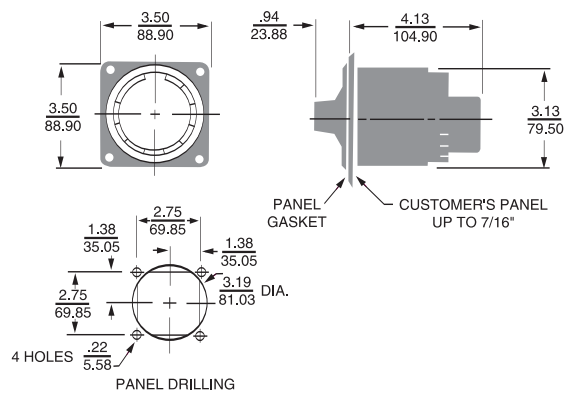
### 304E PLUG-IN



### 304E NON-PLUG-IN



### 304C NON-PLUG-IN



The 304G solid-state percentage timer comes standard in a 120 SEC range with 15 SEC, 30 SEC, 60 SEC user configurable ranges. Additionally, all second ranges can become minute ranges by cutting jumper J0. The 304G is easily panel mounted with 4 screws. It utilizes an integrated circuit technology for high accuracy timing.

**CONTACTS:** The relay contact is capable of switching 10 A to a resistive 120 VAC or 30 VDC load. It is capable of driving a 1/3 HP load at 120 VAC.

**CYCLE PROGRESS INDICATION:** The 304G has a pilot light that is on solid during the relay off time. It blinks at a faster rate during the relay on time: once every 3.5 seconds during the first 10% of the cycle, twice during the second 10% and so on.

**HIGH ACCURACY:** The 304G's timing circuit is not a simple RC circuit. It utilizes the sophistication of a proprietary integrated circuit that includes counting technology along with a stable oscillator to provide repeatable time delays.

**CONVENIENT ADJUSTMENT:** Graduated in easily read 1% increments, the 304G provides continuous adjustment of on time between 5 and 95%.



Solid-State Percentage Timer

**OPERATION**

The 304G comes standard in the 120 SEC range but is user configurable for the 15 SEC, 30 SEC, 60 SEC by cutting jumpers from the PC board. Each of these ranges can also be made minutes range by cutting a jumper. Its solid-state circuitry repeatedly closes the SPST load switch for a percentage of the time cycle, as set on the timer dial, and opens it for the remainder of the cycle.

When the dial pointer is set below 3%, the load switch stays open for the full cycle; it remains closed when the pointer is set above 98%. This is true for all seconds ranges. Minute ranges have a 0.01% minimum.

If power is interrupted to the timer it will reset. When power is restored, the timer will begin a new time cycle.

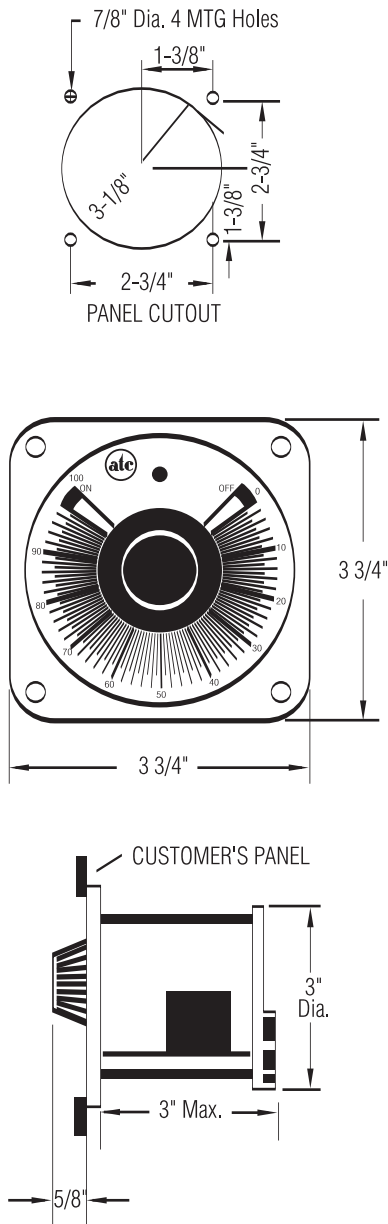
**SPECIFICATIONS**

MODEL	304G Non Plug-In
CONTACT RATINGS (non-inductive)	10A at 120 VAC
TEMPERATURE RATING	32° to 120°F (0° to 50°C)
SETTING ACCURACY	±5% of range 5 to 95% on time, in 1% graduations. FULL ON, FULL OFF FEATURE. When pointer is set below 3%, load switch contacts are open continuously; above 98%, contacts are closed continuously in all seconds ranges. Minute ranges have a 0.01% minimum.
RANGES	Standard 120 SEC range three configurable ranges of 15 SEC, 30 SEC, 60 SEC, 15 MIN, 30 MIN, 60 MIN and 120 MIN
LOAD RELAY	One SPST Relay
POWER REQUIREMENTS	120V, 50/60 Hz; 50mA running current 240V, 24V and 24 VDC also available
TERMINALS	4 screw terminals accessible at rear; wiring diagram on housing
WEIGHT	Net: 5.6 oz.      Shipping: 1 lb.

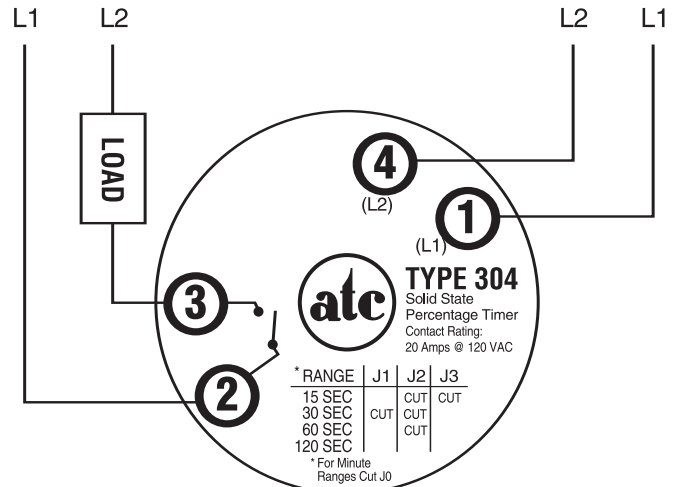
MODEL NUMBER >>>>>	304G			
Range				
Multi-range, Jumper Selectable* 15/30/60/120 SEC *Factory Set to 120 Sec Range	400			
15 SEC	004			
30 SEC	006			
60 SEC	007			
Voltage & Frequency				
120 VAC, 50/60 Hz	Q			
240 VAC, 50/60 Hz	R			
24 VAC, 50/60 Hz	T			
24 VDC	N			
Dial Calibration				
Standard	00			
Reverse Dial	01			
Features				
Standard	XX			
Special	XK			

Percentage Timer // 304G Series

## DIMENSIONS (INCHES)



## WIRING



REAR VIEW OF TIMER

CHART 1

\*Range of Configuration

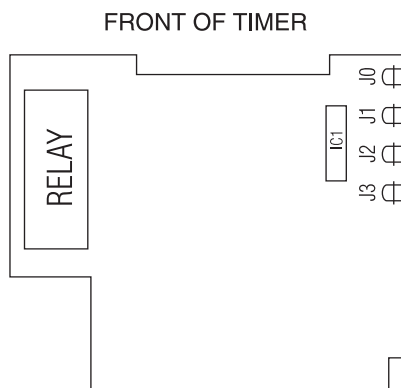
Range	J1	J2	J3
15 SEC	IN	OUT	OUT
30 SEC	OUT	OUT	IN
60 SEC	IN	OUT	IN
120 SEC	IN	IN	IN

\*For same minute ranges, cut J0

Examples:

1. J2 cut makes a 60 SEC range
2. J2 and J0 makes a 60 MIN Range etc.

## USER CONFIGURATION



The operation of the *new* 304GX Percentage Timer is similar to the 304G with several noteworthy *enhancements*. The *accuracy* of the 304GX has been *improved* to 1% of range. With the Cycle Progress Memory feature, when power is removed and restored during the cycle, the 304GX will continue the cycle without resetting. The latching relay only changes state when the cycle reaches the setpoint or the end of the cycle.

**CONTACTS:** The relay contact is capable of switching 10 A to a resistive 120 VAC or 30 VDC load. It is capable of driving a 1/3 HP load at 120 VAC.

**CYCLE PROGRESS INDICATION:** The 304GX has a pilot light that is on solid during the relay off time. It blinks at a faster rate during the relay on time: once every 3.2 seconds during the first 10% of the cycle, twice during the second 25% and so on.

**HIGH ACCURACY:** The 304GX's timing circuit is not a simple RC circuit. It utilizes the microprocessor that includes counting technology along with a stable crystal oscillator to provide repeatable time delays.

**CONVENIENT ADJUSTMENT:** Graduated in easily read 1% increments, the 304GX provides continuous adjustment of on time between 5 and 95%.



Solid-State Percentage Timer



**OPERATION**

The 304GX comes standard in the 60 SEC range but is user configurable for the 15 SEC, 30 SEC, 120 SEC by jumpers from the PC board. Each of these ranges can also be made minutes range by a jumper. Its solid-state circuitry repeatedly closes the SPST load switch for a percentage of the time cycle, as set on the timer dial, and opens it for the remainder of the cycle.

When the dial pointer is set below 3%, the load switch stays open for the full cycle; it remains closed when the pointer is set above 98%. This is true for all seconds and minutes.

If power is interrupted, the 304GX timer will not reset and the relay state will not change. When power is restored, the timer will continue the interrupted cycles.

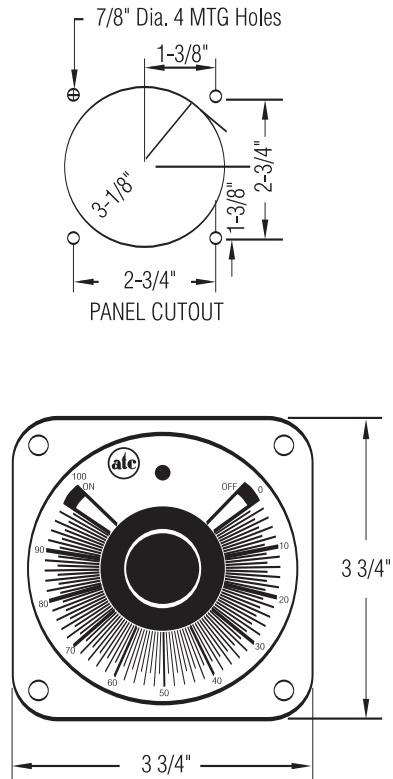
MODEL NUMBER >>>>>>	304GX			
Range				
Multi-range, Jumper Selectable*				
15/30/60/120 SEC	400			
*Factory Set to 60 Sec Range				
15 SEC	004			
30 SEC	006			
60 SEC	007			
Voltage & Frequency				
120 VAC, 50/60 Hz	Q			
240 VAC, 50/60 Hz	R			
24 VAC, 50/60 Hz	T			
24 VDC	N			
Dial Calibration				
Standard	00			
Reverse Dial	01			
Features				
Standard	XX			
Special	XK			

**SPECIFICATIONS**

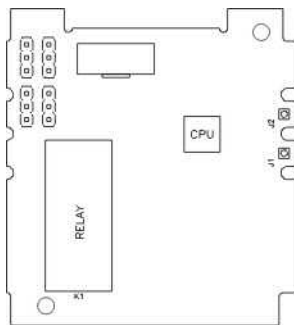
MODEL	304GX Non Plug-In	
CONTACT RATINGS (non-inductive)	10A at 120 VAC	
TEMPERATURE RATING	32° to 120°F (0° to 50°C)	
SETTING ACCURACY	±1% of range 5 to 95% on time, in 1% graduations.	
RANGES	FULL ON, FULL OFF FEATURE. When pointer is set below 3%, load switch contacts are open continuously; above 98%, contacts are closed continuously in all seconds ranges.	
LOAD RELAY	Standard 60 SEC range three configurable ranges of 15 SEC, 30 SEC, 120 SEC, 15 MIN, 30 MIN, 60 MIN and 120 MIN	
POWER REQUIREMENTS	One SPST Relay	
TERMINALS	120V, 50/60 Hz; 50mA running current 240V, 24V and 24 VDC also available	
WEIGHT	4 screw terminals accessible at rear; wiring diagram on housing	
	Net: 5.6 oz.	Shipping: 1 lb.

Percentage Timers // 304GX Series

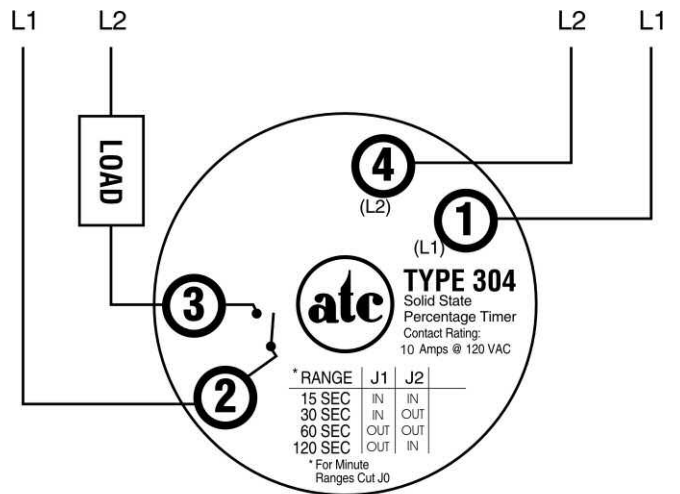
## DIMENSIONS (INCHES)



## USER CONFIGURATION



## WIRING



REAR VIEW OF TIMER

### CHART 1

\*Range of Configuration

Range	J1	J2
15 SEC	IN	IN
30 SEC	IN	OUT
60 SEC	OUT	OUT
120 SEC	OUT	IN

\*For same minute ranges, jump J0

Examples:

1. Jump J2, No Jump J1, make a 120 SEC range
2. Jump J0, No Jump J1, J2, make a 60 minute range.