



# Series 422

## Multi-Range Repeat Cycle Timer



### REPEAT CYCLE OPERATION

The 422 FLIP-FLOP is available with Repeat Cycle operation. During Repeat Cycle operation the 422 cycles ON and OFF repeatedly, allowing periodic cycling of a load. Two knobs are available to individually adjust the ON-time and the OFF-time. The 422 can be ordered with either the relay being energized during the first timing period or de-energized during the first timing period.

### SINGLE CYCLE OPERATION

The 422 FLIP-FLOP is also available with Single Cycle operation. With Single Cycle operation, the 422 will cycle ON and OFF one time. This is commonly referred to as "one-shot" operation. The 422 can be ordered with the relay being energized during the first timing period or de-energized during the first timing period.

### MULTIPLE RANGES

The 422 FLIP-FLOP has six selectable timing ranges for the ON-time period and 6 selectable ranges for the OFF-time period. These ranges can be ordered as either 1 and 10 SEC/MIN/HRS or 5 and 50 SEC/MIN/HRS. Having these ranges individually selectable for ON-time and OFF-time allows for a load to be energized for a brief time over a cycle that can last up to 50 hours. This is ideal for lubrication or other maintenance functions that must occur each shift or day during a plant operation.

### STANDARD 1/8TH DIN HOUSING

The 422's 1/8th DIN housing is compact, and designed for panel mounting. The timer is mounted in an 8 pin round (octal) socket. The front of the 422 features 2 knobs. One knob is used to set the On-time and the other knob is used to set the Off-time for the timer's cycle.

The timing range for the On-time and Off-time can be individually set. The range select switches are located on the side of the housing, so that when panel mounted, these switches are not accessible to the operator. This tamper proof feature prevents unauthorized or hazardous changes to the timing range from being made.

*See next page for additional product features.*

## PRODUCT HIGHLIGHTS

- Multi-range repeat cycle timer.
- Six Selectable Ranges:
  - 1 and 10 SEC/MIN/HRS
  - 5 and 50 SEC/MIN/HRS
- Individually adjustable ON-time and OFF-time.
- Cycle can begin with relay energized or de-energized.
- Both Repeat Cycle and Single Cycle operation available.
- DPDT Relay Output.
- Relay rated 10 A @ 30VDC, 240VAC.
- Power: 24VDC, 24 to 240VAC.
- Standard 1/8th DIN Housing.
- Can be panel mounted.
- Cycle progress indication.

**RELAY OUTPUT (DPDT)**

The output of the 422 is a DPDT mechanical relay which is rated for 10 Amps at 30 VDC and 240 VAC. The 422 can be ordered with this output being energized during the first timing period, or de-energized during the first timing period.

**UNIVERSAL POWER SUPPLY**

A single Flip-Flop Timer can be powered using 24-240 VAC or 24 VDC power, greatly simplifying ordering and inventory management of replacement units.

**HIGH ACCURACY**

The 422'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.

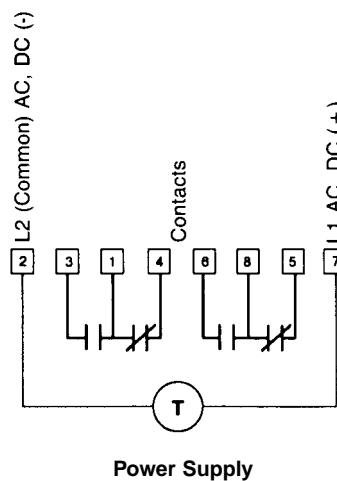
**CYCLE PROGRESS INDICATION**

The 422 has individual LED indicators for ON-time and Off-time. These LED's provide a unique and effective method of cycle progress indication. Off before timing, the LED's blink 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 until the timing cycle is complete. (In the 1, 5, 10 and 50 second ranges, the LED is Off before timing and steady On during the timing cycle).

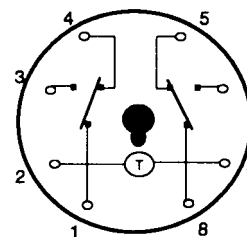
**APPROVALS**

See Agency Listing on inside back cover of catalog.

**WIRING**



**TERMINAL WIRING**



Bottom view of Timer

**OPERATION**

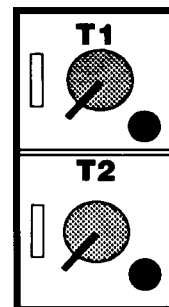
**Repeat Cycle**

Timing begins when power is applied to terminals 2 & 7. The timer operates continuously through its two timing ranges (T1 and T2), one after the other, transferring the relay contacts as it times out of each range. The relay will energize during either the T1 or T2 time depending on the particular model specified (see accompanying chart). There is no start circuit and the timer resets on power interruption.

**Single Cycle**

Timing begins when power is applied to terminals 2 & 7. The timer will operate for one cycle only, that is, the relay will energize during either the T1 or T2 time depending on the particular model specified (see accompanying chart). Power must be removed from terminal 2 or 7 to reset the timer. The timer will reset on power interruption.

Model	T1	T2
... F1 ...	de-energized	energized
... F3 ...	energized	de-energized



Before starting your design, read the safety statement on the inside back cover of the ATC catalog.

**SPECIFICATIONS**

**RANGE**

Model 422A100...(1 or 10 SEC/MIN/HRS)  
 Model 422A500...(5 or 50 SEC/MIN/HRS)

**CONTACT RATING**

Rated 10 AMPS resistive at 30 VDC or 250 VAC (or less)  
 1/8 HP @ 120 VAC  
 1/4 HP @ 240 VAC  
 240 VA @ 240 VAC

LIFE: 10 million operations with no load  
 100,000 operations with: 10 AMPS at 30 VDC (or less) or 10 AMPS at 250 VAC (or less)

CONTACT MATERIAL:  
 Silver Cadmium Oxide

TEMPERATURE RATING  
 -18°C to 60°C (0° to 140°F)

**NOISE IMMUNITY**

Showering ARC per NEMA ICS 2-230. In addition, the 422A will withstand a voltage surge of 4500 volts for 50 usec.without damage.

**MOUNTING**

Plug-in octal base

- Options:
- Surface mounting socket
  - DIN rail mounting socket
  - Plug-on socket kit (8 pin)
  - Panel mounting kit
  - 8 pin panel socket w/rear facing terminals

**POWER REQUIREMENTS**

Universal power supply. Unit will accept power from 24 to 240 VAC, 50 or 60 Hz, (+10%, -20%)

24 VDC (+20%, -20%)

**AC:** Inrush - 1.5 Amps

Power required - 1.2 watts

**DC:** Maximum ripple at 60 Hz - 5%

Current required - 50mA

Power required - 1.2 watts

**MINIMUM SETTING**

2% of range, with the exception of 50 msec on the seconds range.

**SETTING ACCURACY**

+/-5% of range.

**REPEAT ACCURACY**

Varies as a function of temperature. Any voltage (constant temperature):

+/- 0.5%\*

Any voltage (32° F to 140° F):

+/-1.5%\*

Any voltage (0° F to 140° F):

+/-2.0%\*

\*Variation from average actual time.

**RESET**

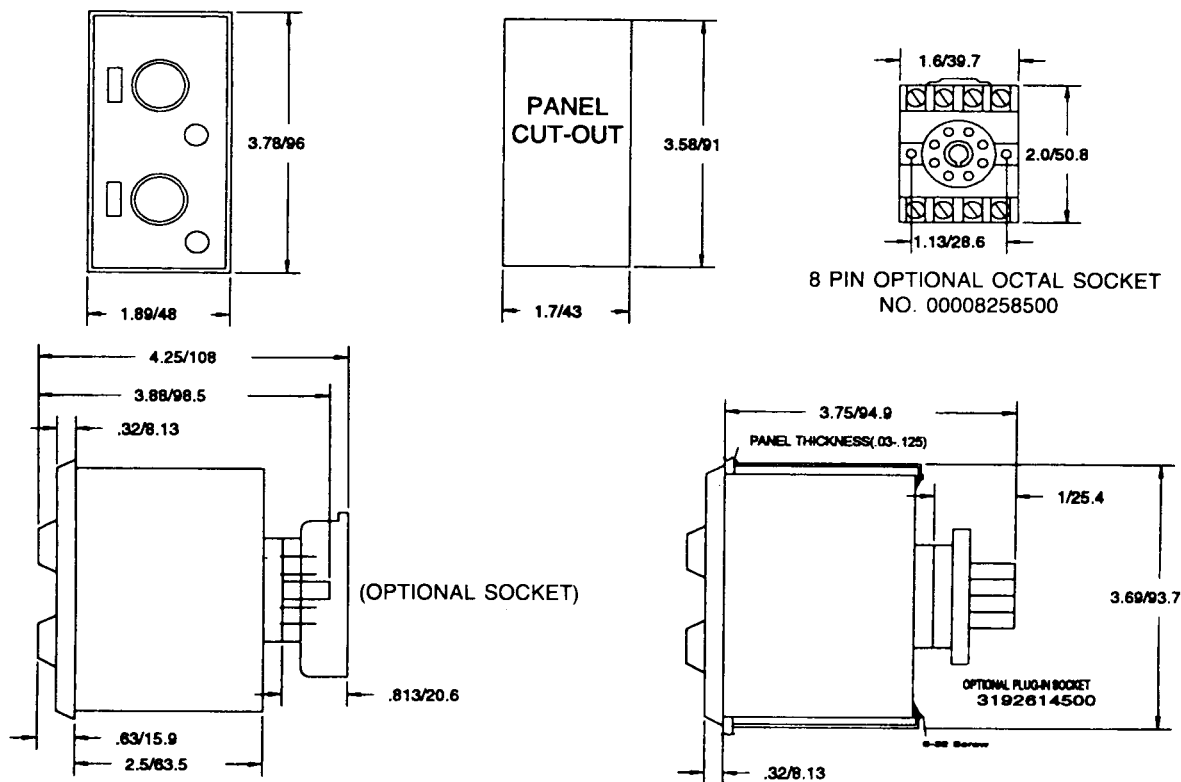
- 0 to 20 msec power interruption: guaranteed no reset.
- 20 to 65 msec; it may reset (40 msec typical reset).
- Over 65 msec guaranteed to reset.

**WEIGHT**

7 ounces

**DIMENSIONS:**

INCHES  
 MILLIMETERS



**SERIES 422A FLIP-FLOP TIMER**

## ORDERING CODE

	422A	100	F	1	0	X
BASIC TYPE	_____	_____	_____	_____	_____	_____
RANGE	_____					_____
<b>100</b>	Six dial-selected ranges (1 or 10 SEC/MIN/HRS)					
<b>500</b>	Six dial-selected ranges (5 or 50 SEC/MIN/HRS)					
VOLTAGE/FREQUENCY	_____					_____
<b>F</b>	24 to 240 VAC (50/60 Hz) and 24 VDC					
<b>E</b>	12 VDC					
SEQUENCE	_____					_____
<b>1</b>	OFF/ON (Relay energized during T2)					
<b>3</b>	ON/OFF (Relay energized during T1)					
CYCLE TYPE	_____					_____
<b>0</b>	Repeat Cycle					
<b>5</b>	Single Cycle					
FEATURES	_____					_____
<b>X</b>	Standard					
<b>K</b>	Special					

**ACCESSORIES**

- 0000-825-85-00** 8 Pin surface/DIN rail socket
- 0422-025-02-00** Hold down for above socket
- 0328-260-02-00** Panel mounting kit consisting of gasket and 2 clamps
- 0319-261-45-00** Plug on socket kit (8-pin)
- 0000-825-87-00** 8 Pin panel socket w/rear facing terminals

For prices and further information, consult factory.