



Multi-Range Repeat Cycle Timer

The **422A FLIP-FLOP** is available with *Repeat Cycle* operation. During Repeat Cycle operation the 422A 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 422A can be ordered with either the relay being energized during the first timing period or de-energized during the first timing period.

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

There are six selectable timing ranges available 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.

The 422A's 1/8 DIN housing is compact, and designed for panel mounting. The timer is mounted in an 8-pin round (octal) socket. The front of the 422A 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.

- 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
- Cycle progress indication
- DPDT Relay Output
- Relay rated 10 A @ 30 VDC, 240 VAC
- Power: 24 VDC, 24 to 240 VAC
- Standard 1/8 DIN Housing
- Can be panel mounted

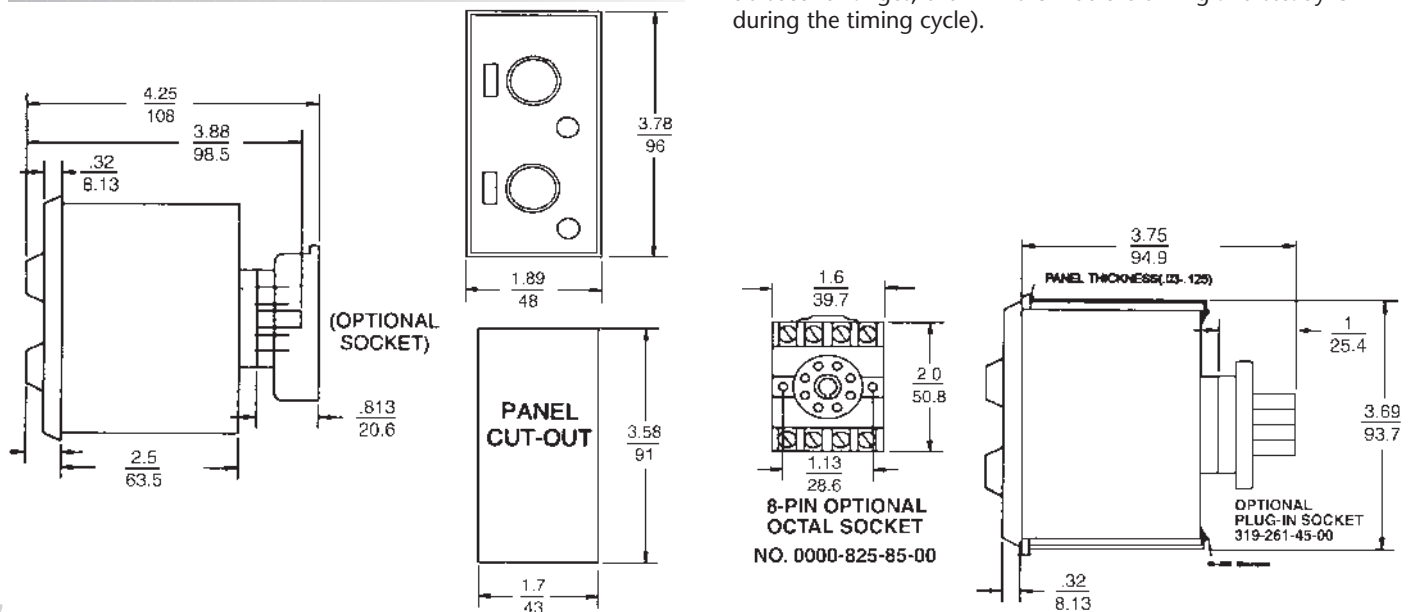
The timing range for the On-time and Off-time can be individually set. The range select switches are located on the side of the housing, so that when panel mounted, these switches are not accessible to the operator. This tamper proof feature prevents unauthorized or hazardous changes to the timing range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

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

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.

The 422A 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).

DIMENSIONS (INCHES/MILLIMETERS)



SPECIFICATIONS		
RANGE	422A100	1 or 10 SEC/MIN/HRS
	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	
LIFE	240 VA @ 240 VAC	
	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	0° to 140°F (-18°C to 60°C)	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230. In addition, the 422A will withstand a voltage surge of 4500 volts for 50 μsec. without damage.	
MOUNTING	Plug-in octal base	
	Options: Surface mounting socket DIN rail mounting socket Plug-in 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 - 50 mA 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	a	0 to 20 mSEC power interruption: guaranteed no reset
	b	20 to 65 mSEC; it may reset (40 mSEC typical reset)
	c	Over 65 mSEC guaranteed to reset
WEIGHT	7 ounces	

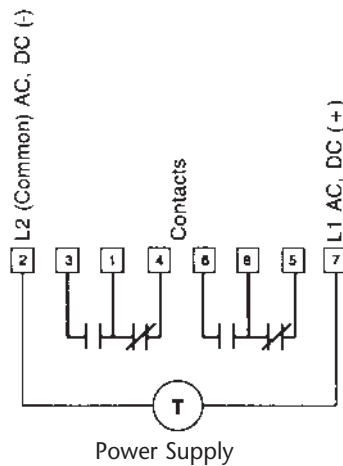
**OPERATION**

**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.

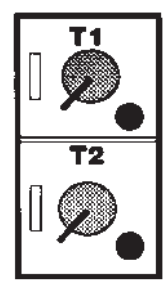
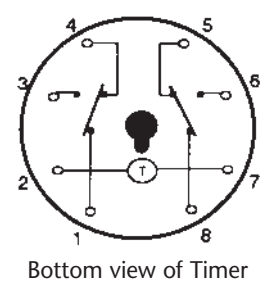
**Single Cycle:** Timing begins when power is applied to terminals 2 & 7. The timer will operate for one cycle only, that is, the relay will energize during either the T1 or T2 time depending on the particular model specified (see accompanying chart). Power must be removed from terminal 2 or 7 to reset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

MODEL NUMBER >>>>>>	422A	
Range		
Six dial-selected ranges (1 or 10 SEC/MIN/HRS)	100	
Six dial-selected ranges (5 or 50 SEC/MIN/HRS)	500	
Voltage & Frequency		
24 to 240 VAC (50/60 Hz) and 24 VDC	F	
12 VDC	E	
Sequence		
OFF/ON (Relay energized during T2)	1	
ON/OFF (Relay energized during T1)	3	
Cycle Type		
Repeat Cycle	0	
Single Cycle	5	
Features		
Standard Timer	X	
Special	K	
Accessories		
8-Pin surface/DIN rail socket	0000-825-85-00	
Hold down for above socket	0422-025-02-00	
Panel mounting kit consisting of gasket and 2 clamps	0328-260-02-00	
Plug-in socket kit (8-pin)	0319-261-45-00	
8-Pin panel socket w/rear facing terminals	600-3-0011	

**WIRING**



**TERMINAL WIRING**



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

Repeat Cycle Timers // 422A Series