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.
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.

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.
**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):
  +/-.05%
- Any voltage (32°F to 140°F):
  +/-.15%
- Any voltage (0°F to 140°F):
  +/-.20%

*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

**DIMENSIONS:**

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8 PIN OPTIONAL OCTAL SOCKET
NO. 0008258500

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(Use of terms and information is for educational purposes only. Always verify and test before use.)
# SERIES 422A FLIP-FLOP TIMER

## ORDERING CODE

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## 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.

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