INSTANTANEOUS & DELAYED: A version of the 405 is available with one set of SPDT instantaneous contacts and one set of SPDT delayed contacts. The instantaneous contacts transfer as soon as the timer is powered. The delayed contacts transfer at time out. This contact arrangement can be used to replace many conventional timers.

ON DELAY/INTERVAL TIMING MODE VERSION: A version of the 405 is available with selectable ON-delay or Interval timing modes. This version has a set of DPDT output contacts. When in the ON-delay mode, the contacts transfer at time out. When in the Interval mode, the contacts transfer when power is applied and release at time out.

UNIVERSAL POWER: All 405 timers can be powered using 24-240 VAC or 24 VDC power, greatly simplifying ordering and inventory management of replacement units.

1/16 DIN HOUSING: The 48mm² (1/16 DIN) housing is compact design. The 405 is mounted in an 8-pin round (octal) socket. With an optional mounting clip, the 405 can be panel mounted.

The Dial on the 405 is extra large and is easy to read. When fractional ranges are selected, decimal points are clearly indicated.

The Mode select and Range select switches are located on the side of the unit, 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 mode and range from being made.

CYCLE PROGRESS INDICATION: The 405 LED indicator provides a unique and 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 pulses at a high rate. (In the 1, 5, 10 and 50 second ranges, the LED is OFF before timing, steady ON during timing, and pulsing ON after time-out).

Timing begins when the start switch is closed. This starts an oscillator which runs at a frequency determined by the time setting. A fixed number of counts from the oscillator determines the end of the timing cycle. The time required to accomplish this depends upon the oscillator frequency. During timing, an LED located on the dial face blinks. For the first 10% of the cycle, LED repeatedly blinks once followed by a pause. For the second 10%, it blinks twice and so on indicating the cycle progress. The LED flashes rapidly and continuously after time out.

OPERATIONS

MODEL...F1X

The instantaneous contacts (3-1-4) transfer immediately after the start switch is closed. The delayed contacts (6-8-5) transfer after the timing cycle indicated on the front dial setting. Both contacts remain transferred until the unit is reset.

MODEL...F2X

ON DELAY MODE: At time out, the DPDT relay transfers its contacts. These contacts remain transferred until the start switch is opened or power is removed by some other means. The 405 then resets and is ready for another cycle.

INTERVAL MODE: When the start switch is closed, the DPDT relay transfers its contacts. The contacts remain transferred until time out. The timer will not start again until the start switch is opened or power is removed by some other means. The 405 then resets and is ready for another cycle.
**MODELS**

- **405C100F1X**  
  ON-Delay w/instantaneous & delayed relays  
  (1 or 10 SEC/MIN/HRS)

- **405C500F1X**  
  ON-Delay w/instantaneous & delayed relays  
  (5 or 50 SEC/MIN/HRS)

- **405C100F2X**  
  ON-Delay/Interval with (1) DPDT relay  
  (1 or 10 SEC/MIN/HRS)

- **405C500F2X**  
  ON-Delay/Interval with (1) DPDT relay  
  (5 or 50 SEC/MIN/HRS)

Both models available in 6 ranges from 1 SEC to 10 HRS or 5 SEC to 50 HRS

**CONTACT**

Rated 10 AMPS resistive at 30 VDC or 250 VAC (or less)

**RATING**

- 1/8 HP @ 120 VAC
- 1/4 HP @ 240 VAC
- 240 VA @ 240 VAC

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

**CONTACT**

- Silver Nickel

**TEMPERATURE**

0 to 122°F (-18 C to 50 C)

**MOUNTING**

- Plug-in octal base; mounts in any position w/ retaining clip
- Options: Surface mounting socket
- DIN rail mounting socket
- Panel-mounting adapter kit
- Plug-on socket kit

**POWER REQUIREMENTS**

Universal power supply - reverse polarity protected

- Unit will accept power from 24 to 240 VAC, 50 or 60 Hz, (+10%, - 20%)
- AC Inrush - 1.5 Amps
  - Power required - 1.2 watts
- DC Maximum ripple @100 Hz - 5%
  - Current required - 50mA
  - Power required - 1.2 watts
  - F option Peak inrush current = 2 AMPS @ 24 VDC
  - N option Peak inrush current = 150 mA @ 24 VDC

**REPEAT**

Varies as a function of temperature.

**ACCURACY**

- Any voltage (constant temperature): ±0.5%
- Any voltage (0°F to 140°F): ±2.0%
  - *Variation from average actual time.

**MINIMUM SETTING**

- 2% of range, with the exception of 50 mSEC on the 1 second range

**SETTING ACCURACY**

- ± 5% of range

**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.
  - The TDR will reset properly and not start timing when subjected to an open start switch leakage of 1.5 mA or less. (Prox switch and Triac drive applications)

**WEIGHT**

- 5 oz. (140 g)
1/16 DIN TIMERS

TYPICAL CIRCUITS

405C... F1X

- Minimum Momentary Switch Closure Time - 50 mSEC

405C... F2X

- For Interval Operation with a Momentary Start Switch, Jumper 7 & 3

- In off-delay mode, start switch must be isolated.
  Do NOT connect any load in parallel

- Load Will Pulse On For 30 - 60 mSEC