



## Timer with Instantaneous Relay

- ON-Delay version with instantaneous relay
- Selectable ON-Delay/Interval Timing Mode version
- Output Contacts rated 10A 120/240 VAC and 30 VDC
- Six Timing Ranges in a single unit
- Timing Ranges:
  - 1 and 10 SEC, MIN, and hours
  - 5 and 50 SEC, MIN, and hours
- Universal Power Supply: 24-240 VAC and 24 VDC
- 48mm<sup>2</sup> DIN Standard housing
- Large and *easy to read* dial shows decimal points
- Round (octal) socket mount or mount in panel cutout
- *Watertight* when panel mounted
- Range and Mode select are *tamper proof* when panel mounted
- Unique flashing cycle progress indication

**Instantaneous & Delayed:** A version of the 405A 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 405A 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 405A 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 48mm<sup>2</sup> (1/16 DIN) housing is compact and is watertight when panel mounted. The 405A is mounted in an 8-pin round (octal) socket. With an optional mounting clip, the 405A can be panel mounted.

The Dial on the 405A 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 405A 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).

### OPERATIONS

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.

#### 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 405A then resets and is ready for another cycle.

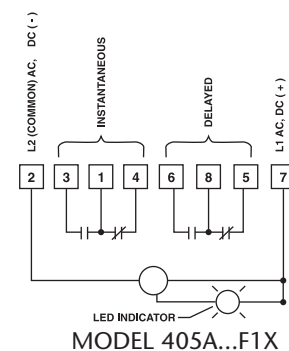
**INTERVAL MODE:** When the start switch is closed, the DPDT relay transfers its contacts. The contacts remain transferred until time out. The timer will not start again until the start switch is opened or power is removed by some other means. The 405A then resets and is ready for another cycle.

SPECIFICATIONS	
MODELS	405A100F1X ON-Delay w/instantaneous & delayed relays (1 or 10 SEC/MIN/HRS)
	405A500F1X ON-Delay w/instantaneous & delayed relays (5 or 50 SEC/MIN/HRS)
	405A100F2X ON-Delay/Interval with (1) DPDT relay (1 or 10 SEC/MIN/HRS)
	405A500F2X 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 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 operation 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 122°F (-18°C to 50°C)
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230. In addition, the 405A will withstand a voltage surge of 4500 volts for 50 μSEC without damage.
MOUNTING	Plug-in octal base; mounts in any position with 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%) 24 VDC (+20%, - 20%)
	AC Inrush - 1.5 Amps Power required - 1.2 watts
	DC Maximum ripple @100Hz - 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 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.
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. (140g)

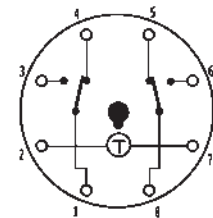
MODEL NUMBER >>>>>>	405A			
Range				
Six dial-selected ranges (1 or 10 SEC/MIN/HRS)	100			
Six dial-selected ranges (5 or 50 SEC/MIN/HRS)	500			
Voltage & Frequency				
12 VDC	E			
24 to 240 VAC (50/60 Hz) and 24 VDC	F			
24 VDC (low inrush current for short-circuit protected sensors)	N			
Arrangement				
8-pin ON-Delay (with instantaneous contacts) Timing Mode	1			
8-pin ON-Delay, Interval Timing Modes	2			
Features				
Standard	X			
Special	K			
Accessories				
8-Pin surface/DIN rail socket	0000-825-85-00			
Hold down for above socket	0407-025-13-00			
Panel mounting bracket	0405-320-02-00			
Plug-in socket kit (8-pin)	0319-261-45-00			
8-Pin panel socket w/rear facing terminals	600-3-0011			

WIRING

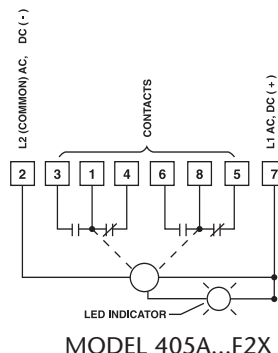
WIRING



TERMINAL WIRING

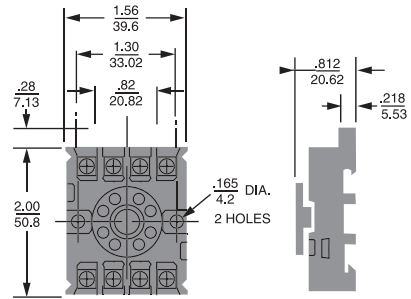
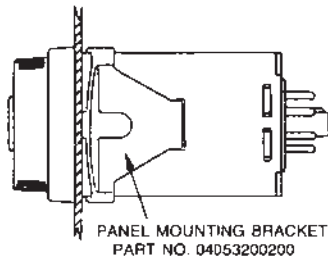
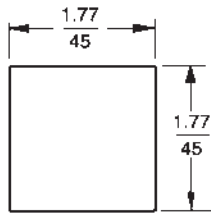
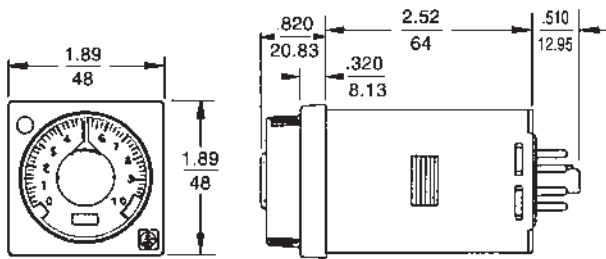


MODEL 405A...F1X

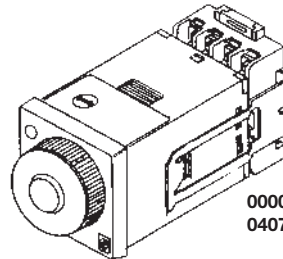


MODEL 405A...F2X

DIMENSIONS (INCHES/MILLIMETERS)



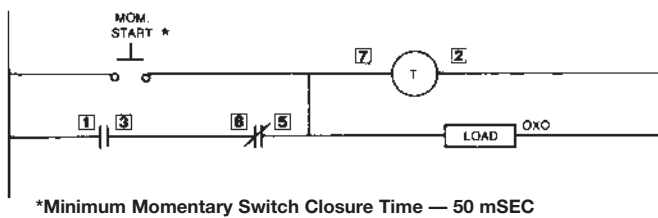
8 PIN OPTIONAL OCTAL SOCKET NO. 00008258500



00008258500 SOCKET WITH 04070251300 HOLD DOWN

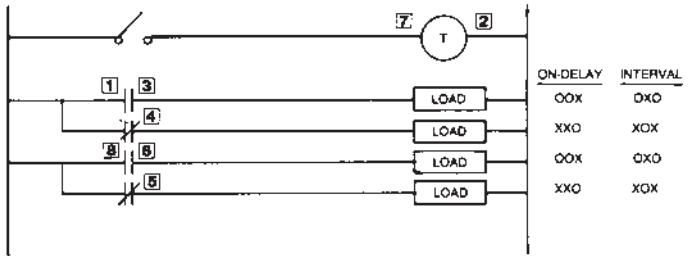
TYPICAL CIRCUITS

405A...F1X

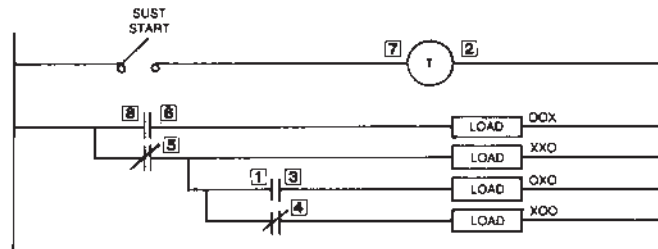


\*Minimum Momentary Switch Closure Time — 50 mSEC

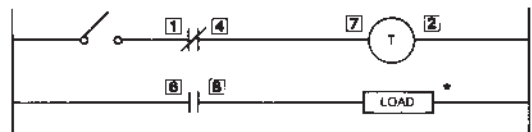
405A...F2X



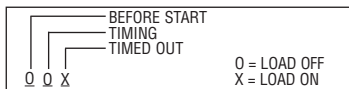
\* For Interval Operation With A Momentary Start Switch, Jumper 7 & 3



For Repeat Cycle Pulse Operation In On-Delay Mode.



\* Load Will Pulse On For 30 — 60 mSEC



**Multiple Timing Modes:** The 407B is available with selectable ON-Delay, OFF-Delay or Interval timing modes. These timing modes energize a set of DPDT output contacts. When in the ON-Delay mode, the 407B begins timing when the timer is energized. In ON-Delay mode, the contacts transfer at time out. When in the OFF-Delay mode, the 407B begins timing when the Start input is de-energized. In OFF-Delay mode, the contacts transfer at time out. When in the Interval mode, the contacts transfer when the timer is energized. In Interval mode, the contacts release at time out.

**Universal Power Supply:** All 407B timers can be powered using 24-240 VAC or 24 VDC power, greatly simplifying ordering and inventory management of replacement units.

**High Accuracy:** The 407B'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.

**1/16 DIN Housing:** The 48mm<sup>2</sup> (1/16 DIN) housing is compact and is watertight when panel mounted. The 407B is mounted in an 11-pin round socket. With an optional mounting clip, the 407B can be panel mounted.

The Dial on the 407B 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 407B 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).

## OPERATION

Timing begins when the start switch is closed (ON-delay and INT modes) or opened (OFF-delay mode). 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, the 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.

**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.

**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 407B then resets and is ready for another cycle.

**OFF-DELAY MODE:** Power must be applied to the timer before and during timing (terminals #10 & 2). Upon closure of the start switch, the DPDT relay transfers its contacts. The timing begins when the start switch is opened. The relay remains energized during timing. At time out, the relay de-energizes.



1/16 DIN Multi-Mode Timer

- Selectable ON-Delay/OFF-Delay/Interval Timing Modes
- Separate Start Input
- Output Contacts rated 10A at 120/240 VAC and 30 VDC
- Six Timing Ranges in a single unit
- 1 and 10 SEC, MIN, and hours  
5 and 50 SEC, MIN, and hours
- Universal Power Supply; 24-240 VAC and 24 VDC
- 48mm<sup>2</sup> DIN Standard housing
- Large and easy to read dial shows decimal points
- Round (octal) socket mount or mount in panel cutout
- Watertight when panel mounted
- Range and Mode select are tamper proof when panel mounted
- Unique flashing cycle progress indication

The 407B Directly Replaces 407A.

Special note for Off-Delay operation: When operated from AC, the start switch must be of a dry contact type such as a relay contact or mechanical switch. When operated from DC, the start switch can be a dry contact type such as a relay contact or mechanical switch. In addition, a solid-state device may be used as long as its saturation voltage drop is less than 1.5 VDC at 50mA.

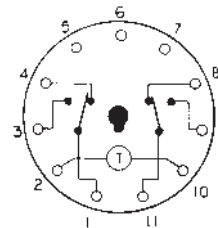
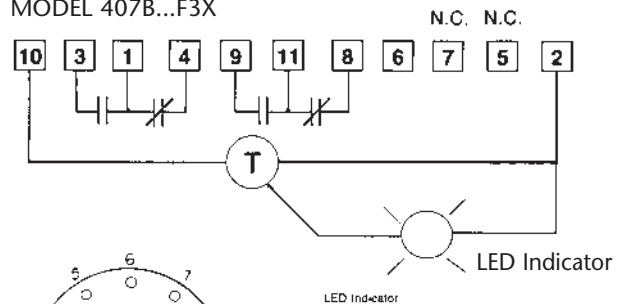
## SPECIFICATIONS

MODELS	407B100F3X	ON-Delay, OFF-Delay, Interval Timing with (1) DPDT relay (1 or 10 SEC/MIN/HRS)
	407B500F3X	ON-Delay, OFF-Delay, Interval Timing 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 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 operation 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°F-122°F (-18°C to 50°C)	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230 In addition, the 407B will withstand a voltage surge of 4500 volts for 50 µsec. without damage.	
MOUNTING	Plug-in 11-Pin round base	
	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%) 24 VDC (+20%, -20%)	
	AC	Inrush - 1.5 Amps Power required - 1.2 watts
	DC	Maximum ripple @ 100Hz - 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 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.		
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 & Triac drive applications)		
TERMINAL #6 (Start switch requirements-Off-Delay)	DC	Minimum Current Rating - 50mA Maximum saturated voltage drop - 1.5 VDC
	AC	Minimum Current Rating - 1.5 A
WEIGHT	5 oz. (140g)	

MODEL NUMBER >>>>>>	407B		3
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	
24 VDC (low inrush current for short-circuit protected sensors)		N	
Arrangement			
11-pin ON-Delay, OFF-Delay, Interval Timing Modes			3
Features			
		Standard	X
		Special	K
Accessories			
11-Pin surface/DIN rail socket	0000-825-86-00		
Hold down for above socket	0405-025-07-00		
Panel mounting bracket	0405-320-02-00		
11 Pin panel socket w/rear facing terminals	600-3-0012		
Plug-in socket kit (11-pin)	0314-260-07-00		

## WIRING

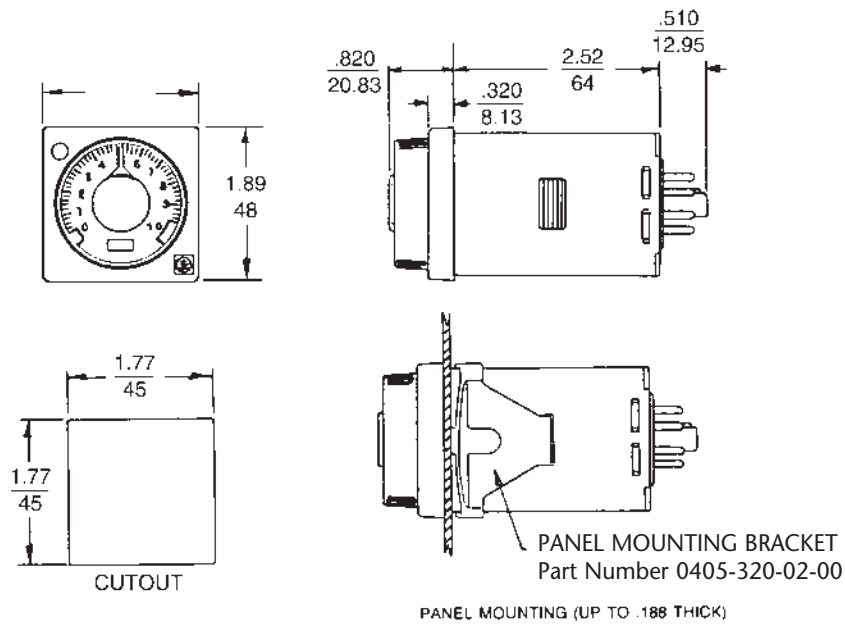
MODEL 407B...F3X



### TERMINAL WIRING

**CAUTION!** Do NOT connect terminal 6 to L1 (AC Hot or DC+). Damage to unit will result. Terminal 6 is a dry contact only!

DIMENSIONS (INCHES/MILLIMETERS)

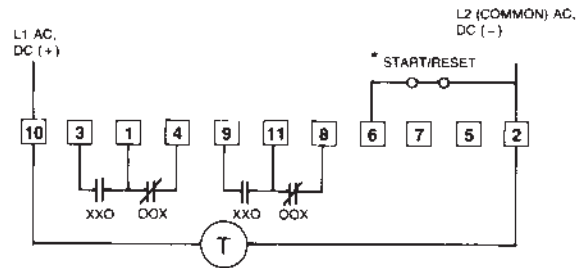
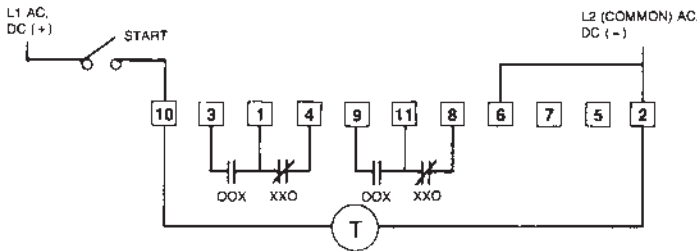


Optional 11-Pin Socket  
Part Number 0000-825-86-00

TYPICAL CIRCUITS

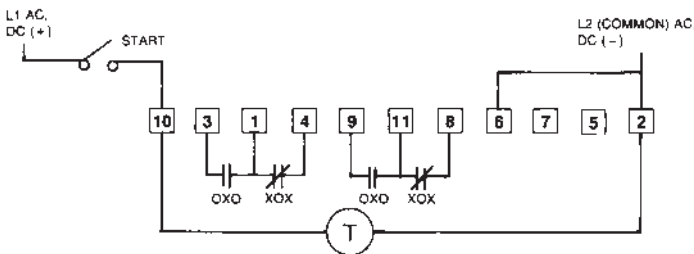
ON-DELAY (Mode Switch in ON-DELAY POSITION)

OFF-DELAY (Mode Switch in OFF-DELAY POSITION)



INTERVAL (Mode Switch in INTERVAL POSITION)

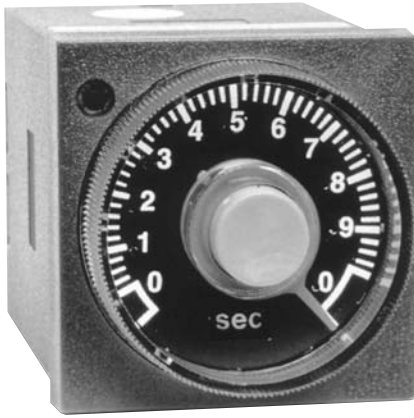
\*in off-delay mode, start switch must be isolated.



Do NOT connect any load in parallel



1/16 DIN timers // 407B Series



1/16 DIN Push-Button Timer

- Push Button Start, Interval Timing Mode
- Push Button Integral to front dial
- Output Contacts rated 10A at 120/240 VAC and 30 VDC
- Six Timing Ranges in a single unit:  
1 and 10 SEC., MIN, and hours  
5 and 50 SEC., MIN, and hours
- Universal Power Supply: 24-240 VAC and 24 VDC
- 48mm<sup>2</sup> DIN Standard housing
- Large and *easy to read* dial shows decimal points
- Round (octal) socket mount or mount in panel cutout
- Watertight when panel mounted
- Range and Mode select are tamper proof when panel-mounted

**Push Button Start/Internal:** The 409A has a Push Button built into its front dial. When pressed, the timer starts and provides an interval time delay. The 409A has a set of DPDT output contacts. When the Push Button is pressed with power applied, the contacts immediately transfer. After the timer has timed out, the contacts release.

**Universal Power Supply:** All 409A timers can be powered using 24-240 VAC or 24 VDC power, greatly simplifying ordering and inventory management of replacement units.

**High Accuracy:** The 409A'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.

**1/16 DIN Housing:** The 48mm<sup>2</sup> (1/16 DIN) housing is compact and is water-tight when panel mounted. The 409A is mounted in an 8-pin round (octal) socket. With an optional mounting clip, the 409A can be panel mounted.

The dial on the 409A is extra large and is easy to read. When fractional ranges are selected, decimal points are clearly indicated.

The Range Select Switch is located on the side of the unit, so that when panel mounted, this switch is not accessible to the operator. This tamper proof feature prevents unauthorized or hazardous changes to the timing range from being made.

OPERATIONS

Timing begins when the front green push button is pressed. This energizes the DPDT relay and 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 LED indicates the status of the relay output. It comes on when the green push button is pressed and remains on steady during the cycle. The LED turns off after the cycle is completed and the contacts released.

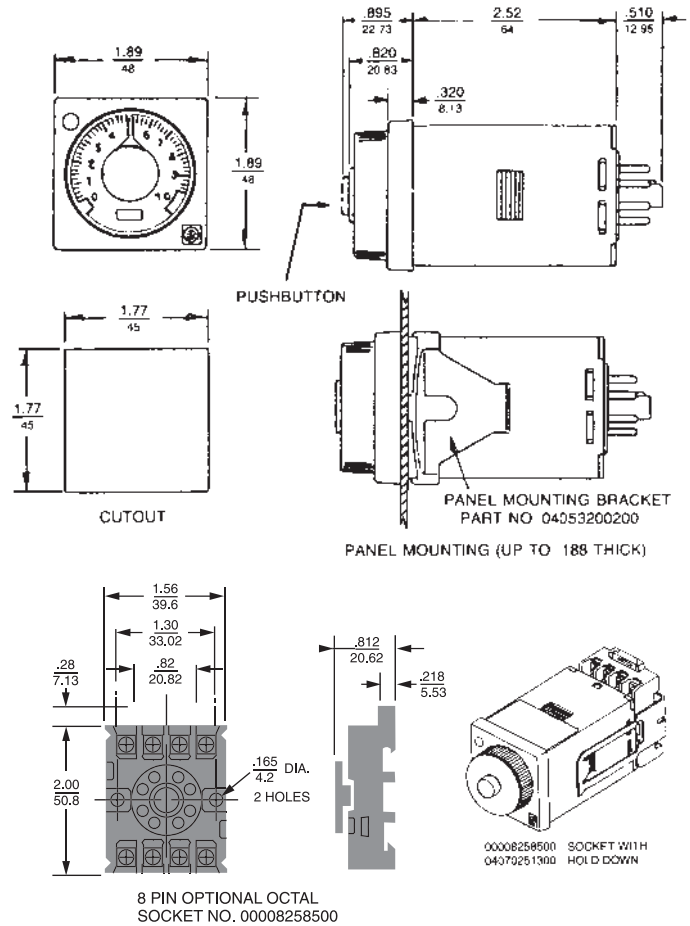
MODEL NUMBER >>>>>>	409A		2
	Range		
	Six dial-selected ranges (1 or 10 SEC/MIN/HR)	100	
	Six dial-selected ranges (5 or 50 SEC/MIN/HR)	500	
	Voltage & Frequency		
	12 VDC	E	
	24 to 240 VAC (50/60 Hz) and 24 VDC	F	
	Arrangement		
	8-pin, Push Button Start, Interval Operation		2
	Features		
	Standard		X
	Special		K
Accessories			
8-Pin surface/DIN rail socket	0000-825-85-00		
Hold down for above socket	0407-025-13-00		
Panel mounting bracket	0405-320-02-00		
Plug-in socket kit (8-pin)	0319-261-45-00		
8-Pin panel socket with rear facing terminals	600-3-0011		

1/16 DIN Timers // 409A Series

SPECIFICATIONS

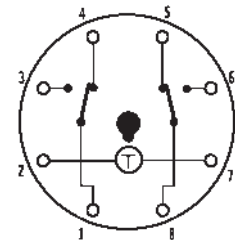
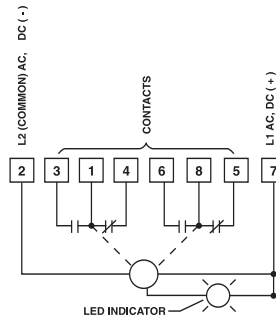
MODELS	409A100F2X	Push Button Start, Interval Timing with (1) DPDT relay (1 or 10 SEC/MIN/HRS)
	409A500F2X	Push Button Start, Interval Timing with (1)DPDT relay (5 or 50 SEC/MIN/HRS)
Both models available in 6 ranges from 1 SEC to 10 HRS or 5 SEC to 50 HRS		
Rated 10 AMPS resistive at 30 VDC or 250 VAC (or less)		
CONTACT 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 MATERIAL	Silver Cadmium Oxide	
TEMPERATURE RATING	0 to 122°F (-18°C to 50°C)	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230. In addition, the 409A will withstand a voltage surge of 4500 volts for 50 μSEC without damage.	
MOUNTING	Plug-in octal base; mounts in any position with retaining clips.	
	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%) 24 VDC (+20%, -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
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%*	
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
WEIGHT	5 oz. (140g)	

DIMENSIONS (INCHES/MILLIMETERS)



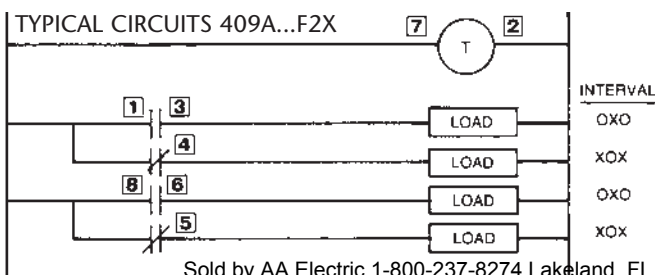
WIRING

Model 409A...F2X



Terminal Wiring

TYPICAL CIRCUITS



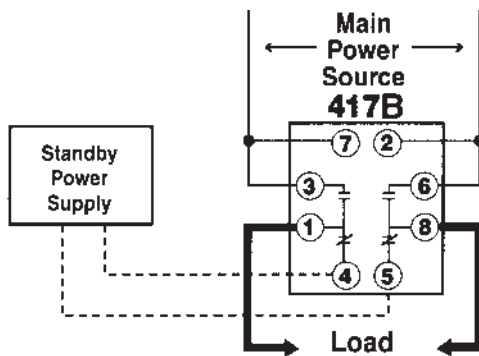


## True OFF-Delay Timer

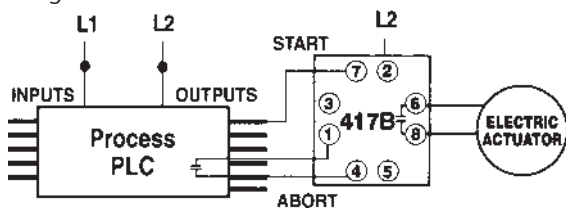
- True OFF-Delay mode of operation
- Output contacts rated 10A at 120/240 VAC
- Three timing ranges in a single unit:  
10 SEC, 1 MIN, 10 MIN  
5 SEC, 0.5 MIN, 5 MIN
- Universal power operation:  
24 VAC to 240 VAC  
& 24 VDC
- 8-Pin or 11-Pin mounting.
- Remote reset models.
- 48mm<sup>2</sup> DIN standard housing
- Watertight when panel-mounted
- Range selection is tamper-proof when panel-mounted.

### TYPICAL APPLICATIONS

Whenever main power is interrupted, the 417B (adjustable from 0.1 SEC to 10 MIN), enables an emergency back-up power source.



Controlled by a PLC, the 417B timing cycle can be aborted by using the remote reset terminals.



The 417B Directly Replaces 417A.

The 417B True OFF-Delay Timer is designed for the most rugged industrial environments. It offers exceptional electrical noise immunity, with excellent setting and repeat accuracy.

Each 417B can be powered from 24 VAC to 240 VAC and 24 VDC, greatly simplifying ordering and inventory management.

The 48mm<sup>2</sup> (1/16 DIN) housing is compact and watertight when panel-mounted. The 417B is mounted in an 8-pin octal or 11-pin round socket. The 417B can be panel-mounted with an optional mounting clip.

A large time-setting knob is provided for easy adjustment by operator.

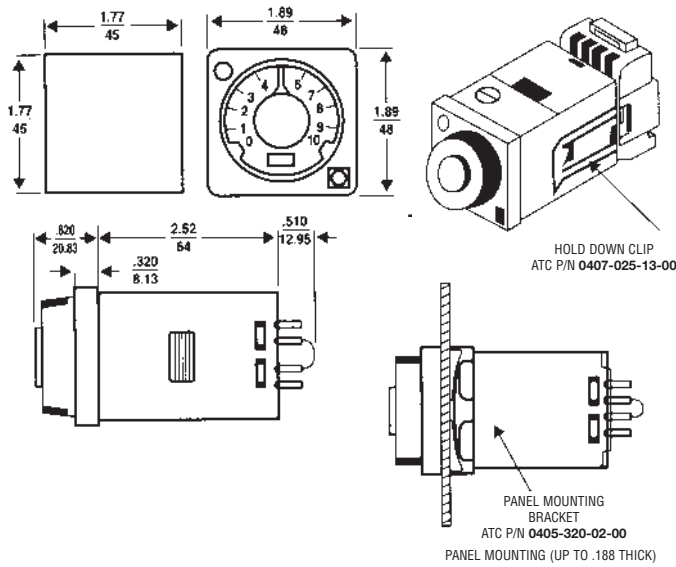
The range select switch is located on the side of the unit; therefore, once panel-mounted, the switch is not accessible to the operator. This tamper-proof feature prevents unauthorized or hazardous changes to the timing range.

The 417's high intensity LED turns on when power is applied to the timer and turns off during timing.

### SPECIFICATIONS

MODELS	Choice of eight multi-range units. Each model has three timing ranges.	
RANGE	Model 417B100 (10 SEC, 1 MIN, 10 MIN)	
	Model 417B500 (5 SEC, 0.5 MIN, 5 MIN)	
CONTACT RATING	10 AMPS (Resistive @ 250 VAC) 1/3 HP @ 120 VAC	
TEMPERATURE RATING	0° to 104°F (-18° to 40°C)	
NOISE IMMUNITY	Showering Arc per NEMA 2-230, the 417 will withstand a voltage surge of 4500 volts for 50 micro seconds without damage.	
MOUNTING	Plug in base available in 8-Pin Octal or 11-Pin Round Base	
	OPTIONS: Surface Mounting Socket DIN Rail Mounting Socket Panel Mounting Kit Plug-in Socket Kit	
POWER REQUIREMENTS	24 to 240 VAC & 24 VDC, 50 or 60 Hz, (+10%, -20%) 24 to 240 VAC. (+20%, -20%) 24 VDC DC MAXIMUM RIPPLE AT 60 Hz-5%	
LOAD RELAY	TYPE	DPDT, Standard Models SPDT, Remote Reset Models
	LIFE	10,000,000 operations (no load) 100,000 operations with 5 AMPS at 30 VDC (or less) or 5 AMPS at 250 VAC (or less)
REPEAT ACCURACY	+/-5%* *variation from avg. actual time	
MINIMUM SETTING	2% of range	
SETTING ACCURACY	+/-10%	
REMOTE RESET	50 mSEC minimum (remote reset models)	
POWER ON TIME	1.0 SEC minimum	
INDICATOR	Power on LED	
HOUSING	48mm <sup>2</sup> (1/16 DIN) housing is watertight when panel mounted	
WEIGHT	NET: 5 oz.	SHIPPING: 1 lb.

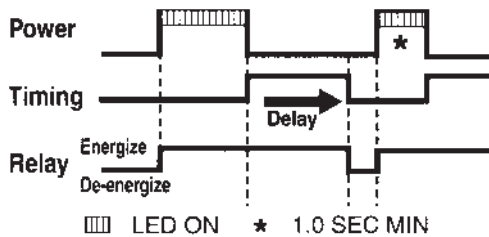
**DIMENSIONS (INCHES/MILLIMETERS)**



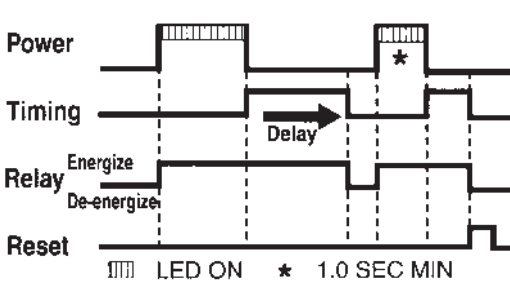
**OPERATIONS**

When power is applied to the timer, the relay energizes and the indicating LED turns on. Timing starts when power is removed, and the LED turns off. The output relay remains energized until the end of the cycle, or by connecting terminals 1 to 4 when using the Remote Reset Model.

Model 417...F.X  
Standard unit with DPDT relay contacts

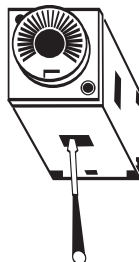


Model 417...F.R  
Same as standard unit except with SPDT relay contacts and ability to reset from an externally located remote reset switch



**SETTING THE RANGE**

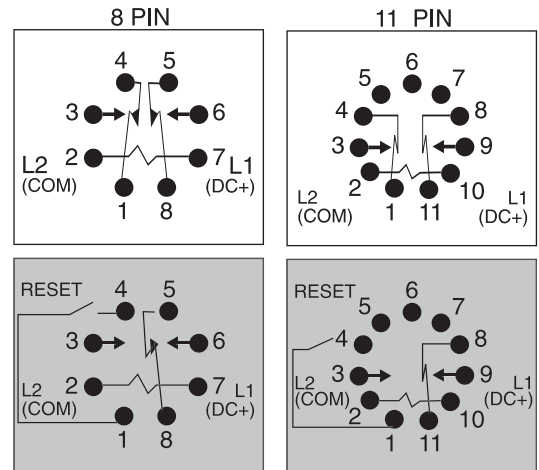
Refer to the drawing. Using a small screwdriver inserted into the adjusting slot as shown (fig. 1), rotate the range switch. The selected range will appear through the window of the dial face.



MODEL NUMBER >>>>>	417B	F
Range		
10 SEC, 1 MIN, 10 MIN	100	
5 SEC, 0.5 MIN, 5 MIN	500	
Voltage & Frequency		
24 to 240 VAC & 24 VDC	F	
Arrangement		
8 Pin Base	2	
11 Pin Base	4	
Features		
Standard	X	
Remote	R	
Special	K	
Accessories-8 Pin		
8-Pin surface/DIN rail socket	0000-825-85-00	
Hold down for above socket	0407-025-13-00	
Panel mounting bracket	0405-320-02-00	
Plug-in socket kit (8-pin)	0319-261-45-00	
8-Pin panel socket with rear facing terminals	600-3-0011	
Accessories-11 Pin		
11-Pin surface/DIN rail socket	0000-825-86-00	
Hold down clips for above socket	0407-025-13-00	
Panel mounting bracket	0405-320-02-00	
Plug-in socket kit (11-pin)	0314-260-07-00	
11-Pin panel socket w/rear facing terminals	600-3-0012	

**WIRING**

TERMINAL WIRING



1/16 DIN Timers // 417 Series



1/16 DIN Bar Graph Display Timer

- Digital Setting with 0.1% Accuracy
- Unique LED Bargraph Indicates Time Cycle in 20% Increments
- Instantaneous and Delayed Relay (SPDT) Version
- Delayed Relay Version (DPDT)
- Output Contacts Rated 10A at 120/240 VAC and 30 VDC
- Timing Ranges:  
0 to 9.99, 99.9 and 999 SEC., MIN, and hours
- Universal Power Supply: 24-240 VAC and 24 VDC
- 48mm<sup>2</sup> DIN Standard Housing
- Round (Octal) Socket Mount or Mount in Panel Cutout
- Range Switches are Tamper Proof When Panel Mounted
- EEPROM Memory Available as an *Option* for Applications Requiring Memory
- *Optional* Pulsed Output Version Available

The 423A is set digitally by rotating each setting knob. This digital setting allows exact, accurate and repeatable timing cycles.

The 423A utilizes a crystal controlled oscillator which provides 0.1% timing accuracy across all rated voltages and temperatures.

**INSTANTANEOUS AND DELAYED RELAY VERSIONS:** A version of the 423A 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.

**TWO DELAYED RELAY VERSION:** A version of the 423A is available with a set of DPDT output contacts. Both delayed contacts transfer at time out.

**UNIVERSAL POWER SUPPLY:** The 423A 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 48mm<sup>2</sup> (1/16 DIN) housing is compact. The 423A is mounted in an 8-pin round (octal) socket. With an optional mounting clip, the 423A can be panel mounted. Positive indication of the setpoint is shown on the front of the 423A. Each digit can be changed by rotating the setting knobs. The decimal point and SEC./MIN/HR/ range are also clearly displayed. The decimal point and SEC./MIN/HR 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 range from being made.

**CYCLE PROGRESS INDICATION:** The 423A LED bargraph indicator provides a unique and effective method of cycle progress indication. Off before timing, the first of five LED's blinks for the first 20% of the timing cycle. After the first 20%, this LED stays on and the next LED blinks. This operation continues for all 5 LED's until the timing cycle is complete. When timed out, all 5 LED's remain on providing positive indication to the operator.

MODEL NUMBER >>>>>>	423A				
	Range				
	0 to 9.99 or 99.9 or 999 SEC, MIN, HR	300			
	Voltage & Frequency				
	24 to 240 VAC (50/60 Hz) and 24 VDC	F			
	24 VDC (low inrush current for short circuit protected sensors)	N			
	Output Arrangement				
	Instantaneous Relay (SPDT), Delay Relay (SPDT)	10			
	Instantaneous Relay (SPDT), Pulsed Relay (SPDT)	15			
	Delay Relay (DPDT)	20			
	Pulsed Relay (DPST)	25			
	Memory				
	Standard-No Memory	X			
	With Memory (EEPROM)	M			
	Features				
	Standard	X			
	Special	K			
	Accessories				
	8-Pin surface/DIN rail socket	0000-825-85-00			
	Hold down for above socket	0407-025-07-00			
	Panel mounting bracket	0405-320-02-00			
	Plug-in socket kit (8-pin)	0319-261-45-00			
	8-Pin panel socket with rear facing terminals	0000-825-87-00			

1/16 DIN Timers // 423A Series

**MEMORY & PULSED OUTPUT:** As options, the 423A can be ordered with EEPROM memory or a pulsed output. The EEPROM memory option allows the 423A to retain its position in the timing cycle when power is removed.

The Pulsed Output option provides a 250ms pulse using the 423A's delayed relay(s). This provides a short, momentary signal at the end of a timing cycle.

## OPERATIONS

Timing begins when power is applied to terminals 2 & 7.

The 423A's microcontroller accumulates counts from a crystal oscillator until the target number of counts, as determined by the setting knobs, the decimal point switch and the SEC/MIN/hours switch on the front of the unit is reached. During timing 5 LED's illuminate indicating the current position in the timing cycle. For the first 20% of the timing cycle, the first LED blinks. For the second 20% of the timing cycle, the second LED blinks while the first stays on. The bargraph continues to fill with illuminated LED's until 100% of the timing cycle is complete. The entire LED bargraph remains illuminated after time out.

The timing cycle resets to 0 if power is removed. For 423A models with the memory option, the current position in the timing cycle is stored before power is lost. Upon restoration of power, the timing cycle continues from where it was left off.

Note: The only way to reset a 423A model with memory is to allow it to time out first and then remove power.

**MODEL...F10XX OR...F10MX:** The instantaneous contacts (3-1-4) transfer immediately after power is applied to terminals 2 & 7. The delayed contacts (6-8-5) transfer after the timing cycle is complete. Both contacts remain transferred until the unit is reset by removing power.

**MODEL...F20XX OR...F20MX:** At time out, the DPDT relay transfers its contacts. These contacts remain transferred until power is removed. The 423A then resets and is ready for another cycle.

**MODEL...F15XX OR...F15MX:** The instantaneous contacts (3-1-4) transfer immediately after power is applied to terminals 2 & 7. The pulsed contacts (6-8-5) transfer for 250 ms upon completion of the timing cycle. The instantaneous contacts remain transferred until the unit is reset by removing power.

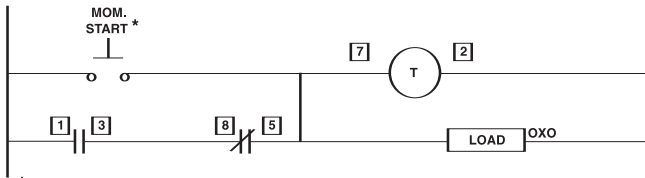
**MODEL...F25XX OR...F25MX:** At time out, the pulsed DPST relay transfers its contents for 250ms. The unit remains timed out until power is removed. The 423A is then reset and ready for another cycle.

## SPECIFICATIONS

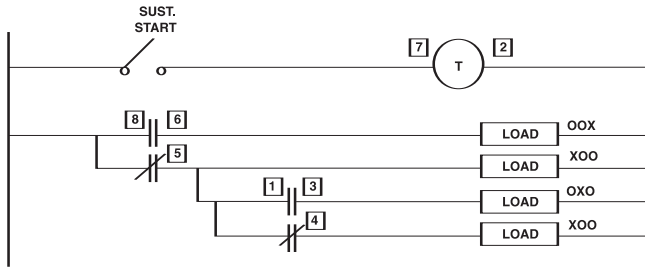
MODELS (4 TYPES)	ON-Delay with Instantaneous and Delayed Relays	
	ON-Delay with Instantaneous and Pulsed Relays	
	ON-Delay with Two Delayed Relays	
	ON-Delay with Two Pulsed Relays	
All available with EEPROM Memory as an option		
CONTACT RATING	Rated 10 AMPS resistive at 30 VDC or 250 VAC (or less)	
	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) @ 50°C	
CONTACT MATERIAL	Cadmium Silver Oxide	
TEMPERATURE RATING	0 to 140°F (-18°C to 60°C)	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230. In addition, the 423A will withstand a voltage surge of 4500 volts for 50 µsec. without damage.	
MOUNTING	Plug-in octal base; mounts in any position with retaining clips.	
	Options: Surface mounting DIN 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%) 24 VDC (+20%, -20%)	
	AC	Inrush - 1.5 Amps Power required - 1.2 watts
	DC	Maximum ripple @ 100 Hz - 10% Current required - 50 mA Power required - 1.2 watts "F" option - Peak inrush current= 2 AMPS @ 24 VDC "N" option - Peak inrush current=150 mA @ 24 VDC
REPEAT ACCURACY	±0.1% over all rated voltages (crystal controlled)	
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)		
MEMORY (optional)	EEPROM 100,000 read/write cycles	
WEIGHT	5 oz., (140 g)	

## TYPICAL CIRCUITS

423A...F10...X

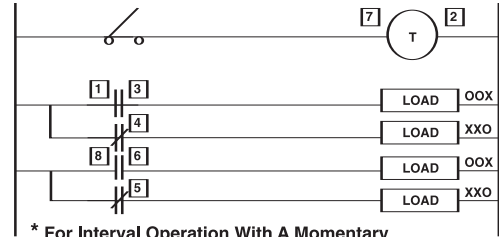


\* Minimum Momentary Switch Closure Time — 50 mSEC



Note: For Pulsed Relay models, Timed Out State is active for only 250 ms.

423A...F20...X

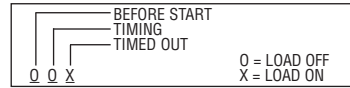


\* For Interval Operation With A Momentary Start Switch, Jumper 7 & 3

For Repeat Cycle Pulse Operation

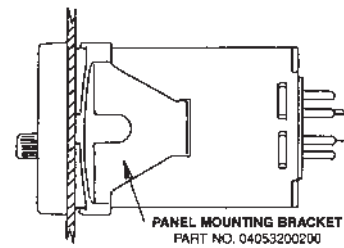
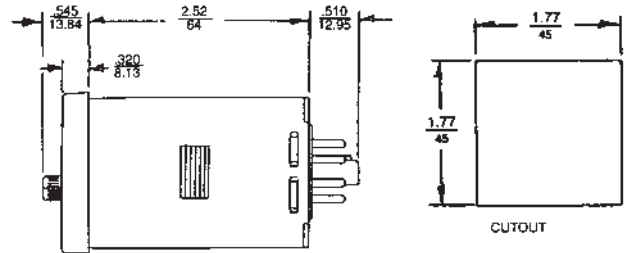
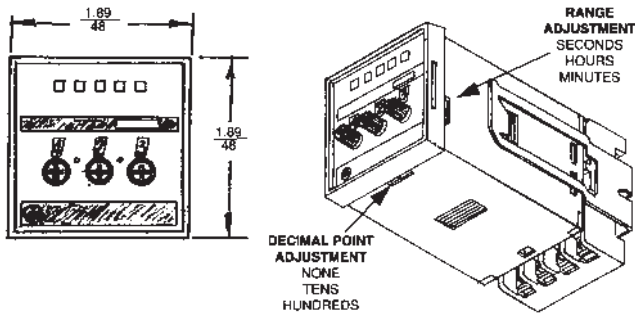


\* Load Will Pulse On For 30 — 60 mSEC

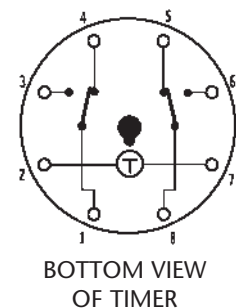
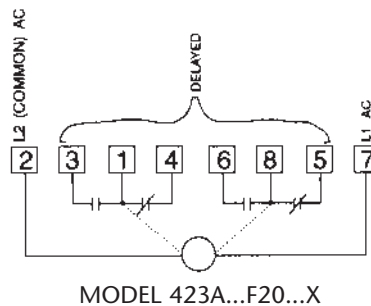
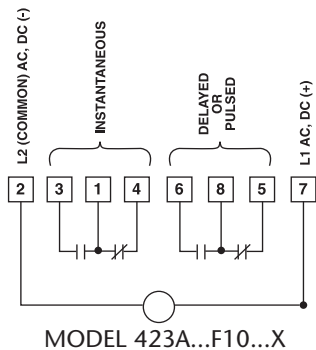


Note: For Pulsed Relay models, Timed Out State is active for only 250 ms.

## DIMENSIONS (INCHES/MILLIMETERS)



## WIRING



**DIGITAL SETTING:** The 425A is set digitally by rotating each setting knob until the desired Time Preset is displayed by the number wheels on the front of the timer. The digital setting allows exact, accurate and repeatable timing cycles.

**HIGH ACCURACY:** The 425A utilizes a crystal controlled oscillator which provides 0.1% timing accuracy across all rated voltages and temperatures.

**CYCLE PROGRESS INDICATION:** The 425A offers the industry's brightest green LED display in a 1/16 DIN package. Depending on the Model, the three-digit LED display will time UP to or DOWN from the Time Preset.

Through its internal microcontroller, the 425A keeps track of the time setting by monitoring each of the three Time Preset switches. Whenever a change is made in the time preset, even during a cycle, the 425A instantly re-computes and adjusts the current timing cycle.

**1/16 DIN HOUSING:** The 48mm<sup>2</sup> (1/16 DIN) housing is compact, allowing the 425A to be panel mounted or plug-in using an 8-pin octal socket. The decimal point and SEC/MIN/HRS switches are located on the side of the unit. When panel mounted, these range switches are not accessible to the operator. This Tamper-proof feature prevents unauthorized or hazardous changes to the timing range.

**MEMORY OPTION:** The 425A can be ordered as standard with an EEPROM memory. This allows the 425A to retain the elapse time or time remaining during momentary or sustained power interruptions.

**INSTANTANEOUS AND DELAYED RELAY VERSIONS:** A version of the 425A is available with one set of SPDT instantaneous contacts and one set of SPDT delayed contacts.

**DELAYED RELAY VERSION:** A version of the 425A is available with DPDT delayed contacts.

**MODEL 425A300Q10XX (SPDT INSTANTANEOUS & SPDT DELAYED RELAYS):** Timing starts when power is applied to terminals 2 and 7. The instantaneous relay energizes, the LED digital display begins to increment from 0 and the timing LED blinks slowly. When the preset value is reached, the LED blinks rapidly and the Delayed SPDT relay is energized. The timer remains in this timed-out condition until reset by removing power.

**MODEL 425A300Q20XX (DPDT DELAYED RELAY):** Timing starts when power is applied to terminals 2 and 7. The LED display begins to increment from 0 and the timing LED blinks slowly. When the preset value is reached, the LED stops, the timing LED blinks rapidly and the Delayed DPDT relay energizes. The timer remains in this timed-out condition until reset by removing power.

**MODEL 425A300Q10MX & MODEL 425A300Q20MX (MEMORY OPTION):** Operation is same as above, however, units will not reset when power is removed during the timing cycle. Timers with this option can only be reset after time-out, or by adjusting the setting knobs to 000 during the timing cycle.

**CAUTION:** Be advised that the relay(s) will transfer when setting knobs are adjusted to 000 when power is applied.



1/16 DIN LED Digital Display Timer

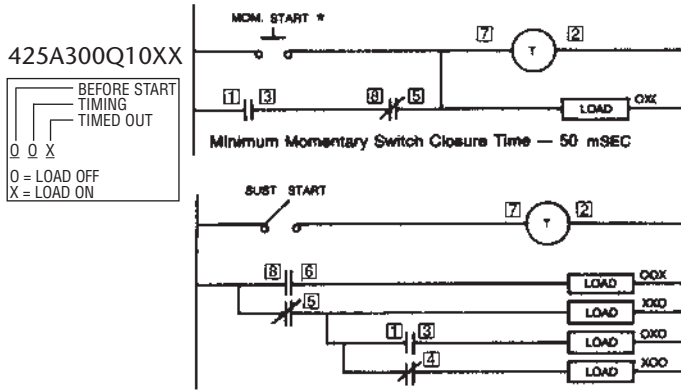


- Easy-To-Read High Intensity Green LED Display
- Timing From .01 SEC to 999 Hrs in One Unit
- Switch Selectable Timing Ranges Are Tamper Proof When Panel Mounted
- Timing LED Indicates Output Relay Status
- Time Preset Can Be Adjusted While Timing
- EEPROM memory Option Standard Feature
- Passes NEMA Showering Arc Noise Test
- Panel Mounting or 8-pin Octal Plug-in mounting
- Timing Up to or Down From the Set Point

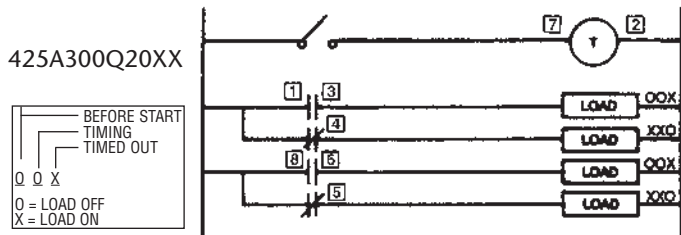
MODEL NUMBER >>>>>>	425A	300			
Range	0 to 9.99 or 99.9 or 999 SEC, MIN, HR		300		
Voltage & Frequency	120 VAC - 240 VAC 50/60 Hz		G		
	120 VAC 50/60 Hz		Q		
Output Arrangement	Instantaneous Relay (SPDT), Delay Relay (SPDT)		10		
	Delay Relay (DPDT)		20		
Memory	Standard-No Memory		X		
	With Memory (EEPROM)		M		
Features	Standard (Time Up)		X		
	Standard (Time Down)		D		
	Special		K		
Accessories					
8-Pin surface/DIN rail socket	0000-825-85-00				
Hold down clips for above socket	0407-025-13-00				
Panel mounting bracket	0405-320-02-00				
Plug-in socket kit (8-pin)	0319-261-45-00				
8-Pin socket w/rear facing terminals	600-3-0011				

1/16 DIN Timers // 425A Series

## TYPICAL CIRCUITS

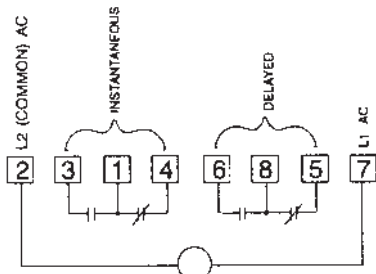


RELAY	CONTACTS	Before Start	During Timing	End of Cycle
Instantaneous	1-3			
	1-4			
Delayed	8-6			
	8-5			

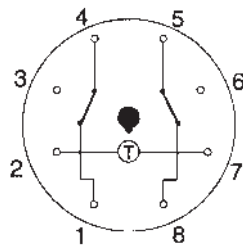


RELAY	CONTACTS	Before Start	During Timing	End of Cycle
Instantaneous	1-3			
	1-4			
Delayed	8-6			
	8-5			

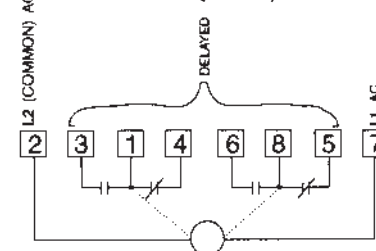
## WIRING



MODEL 425A300Q10XX, XD  
425A300Q10MX, MD



BOTTOM VIEW OF TIMER

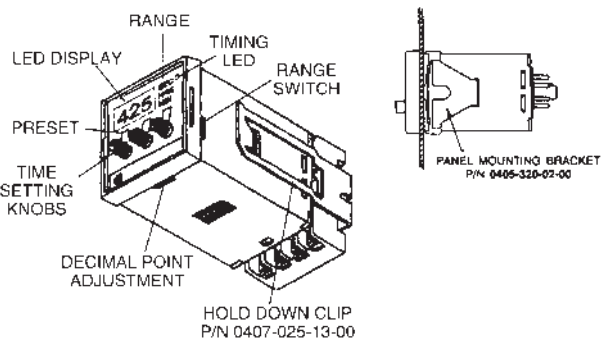
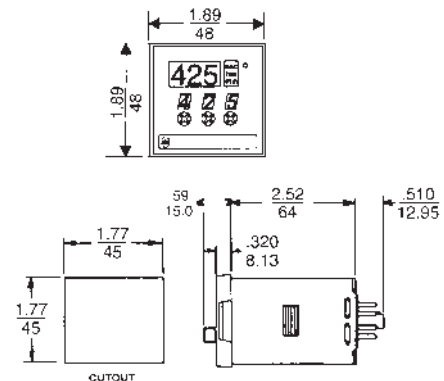


MODEL 425A300Q20XX, XD  
425A300Q20MX, MD

## SPECIFICATIONS

MODELS	425A300Q10XX	ON-Delay Time Up
	425A300Q20XX	ON-Delay Time Up
	425A300Q10XD	ON-Delay Time Down
	425A300Q20XD	ON-Delay Time Down
RANGES	Switch Selectable, 0 to 9.99, 99.9 or 999 Sec/Min/Hrs	
LOAD RELAY	Type	Q10 Models: SPDT, Q20 Models: DPDT
	Life	10 Million operations (no load)
TEMPERATURE RATING	Contact Rating	5 AMPS Resistive @ 250 VAC 30 VDC, or 1/10HP @ 120 VAC
		0° to 140°F (-18° to 60°C)
NOISE IMMUNITY	Showering ARC per NEMA ICS2-230, the 425A will withstand a voltage surge of 4500 volts for 50 microseconds without damage	
MOUNTING	8-Pin Octal plug-in base, Panel Mounting Bracket	
POWER REQUIREMENTS	120 VAC, 50/60 Hz; (10%, -20%); 5WATT maximum	
REPEAT ACCURACY	±.1% over rated voltages	
RESET TIME	100 mSEC minimum	
DISPLAY	Cycle Progress	3 Digit Green LED Display, seven segment numeric
	Timing LED	Red LED blinks slowly (once per second) during timing; blinks rapidly after time out.
MEMORY	EEPROM 100,000 read/write cycles	
HOUSING	1/16 DIN (48mm x 48mm) Housing	
WEIGHT	5oz (140g)	Shipping 1 lb.

## DIMENSIONS (INCHES/MILLIMETERS)



The 427A is set digitally by rotating each setting knob. This digital setting allows exact, accurate and repeatable timing cycles.

The 427A utilizes a crystal controlled oscillator which provides 0.1% timing accuracy across all rated voltages and temperatures.

**FIELD SELECTABLE MODES OF OPERATION:** An 8 position tamper proof mode switch allows easy selection of any one of eight different timing modes:

- On-Delay
- Signal Interval/Off-Delay
- Interval
- Signal On-Delay/Off-Delay
- Repeat Cycle
- Signal Off-Delay
- Cycle One Shot
- Signal Off-Delay (2)

**1/16 DIN HOUSING:** The 48mm<sup>2</sup> (1/16 DIN) housing is compact. The 427A is mounted in an 11-pin round socket. With an optional mounting clip, the 427A can be panel mounted.

Positive indication of the setpoint is shown on the front of the 427A. Each digit can be changed by rotating the setting knobs. The decimal point and SEC./MIN/HR range are also clearly displayed.

The decimal point and SEC./MIN/HR 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 range from being made.

**CYCLE PROCESS INDICATION:** The 427A LED bargraph indicator provides a unique and effective method of cycle progress indication. Off before timing, the first five LED's blink for the first 20% of the timing cycle. After the first 20%, this LED stays on and the next LED blinks. This operation continues for all 5 LEDs until the timing cycle is complete. When timed out, all 5 LEDs remain on providing positive indication to the operator.

**UNIVERSAL POWER SUPPLY:** The 427A can be powered using 24-240 VAC or 24 VDC power, greatly simplifying ordering and inventory management of replacement units.



Multi-Mode Bar Graph Display Timers

- Digital Setting with 0.1% Accuracy
- Unique LED Bargraph Indicates Time Cycle in 20% Increments
- 8 Field Selectable Modes of Operation
- Output Contacts Rated 10A at 120/240 VAC and 30 VDC
- Timing Ranges: 0 to 9.99, 99.9 and 999 SEC., MIN, and hours
- Universal Power Supply; 24-240 VAC and 24 VDC
- 48mm<sup>2</sup> DIN Standard Housing
- 11-Pin Socket Mount or Panel Mount
- Range & Mode Switches are Tamper Proof when Panel-Mounted
- 3 Separate Control Inputs: Start, Gate, Reset

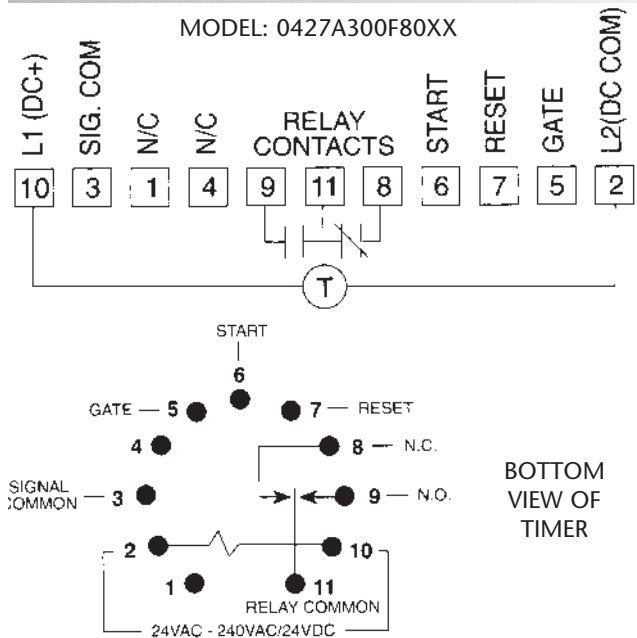
OPERATIONS

Operating Power is applied to terminals (10) & (2). Depending upon the Mode of Operation selected and the wiring of the three Control terminals (START, RESET, GATE) the 427A can be started by wiring the START terminal (6) to (3). The 427A can be reset by wiring the RESET terminal (7) to (3). The timing can be temporarily stopped by wiring the GATE terminal (5) to (3).

When wiring the Control terminals: (5), (6), (7), the use of high quality signal relay or switch is recommended. Do not apply power to any of these terminals or the 427A may be damaged. Keep the leads to the Control terminals as short as possible and do not route in the same conduit or wiring bundles as load carrying wires.

*Do not wire external loads in parallel with these Control terminals. See Modes of Operation*

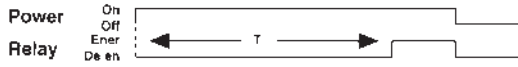
WIRING



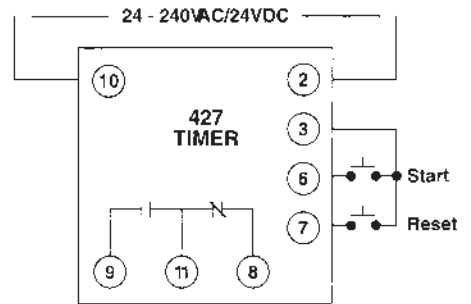
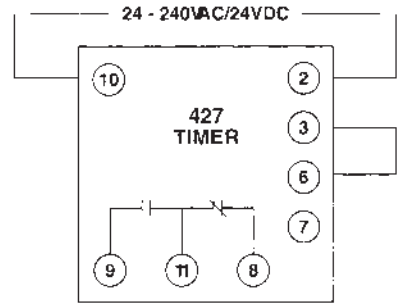
1/16 DIN Timers // 427A Series

## ON-DELAY OPERATION (MODE A)

When operating power is applied, the time-delay begins. At the end of the time-delay, the output relay energizes and remains energized until reset by removing the operating power.

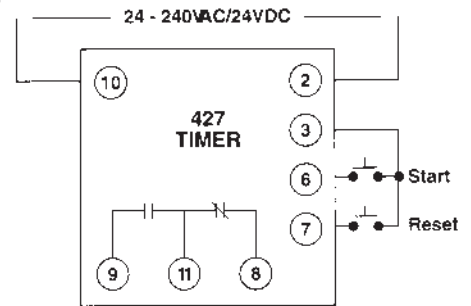
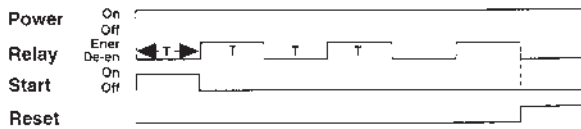


Using the START and RESET control terminals: With operating power applied, timing starts at the leading edge of the start signal. At the end of the timing, the output relay energizes and remains energized until reset by the leading edge of the reset signal, or removal of operating power.



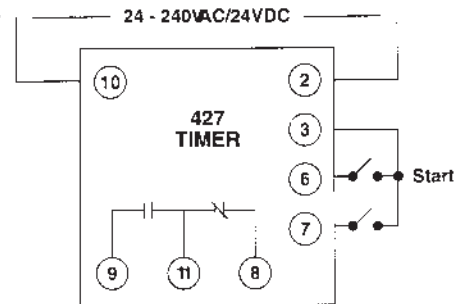
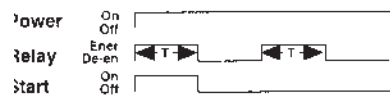
## REPEAT CYCLE OPERATION (FLASHER)

When operating power is applied, the preset off time begins. When the off time ends, the output relay energizes and the on time begins. When the on time ends, the relay de-energizes and a new cycle begins. The timer recycles until the operating power is removed, or momentarily enabling the reset.



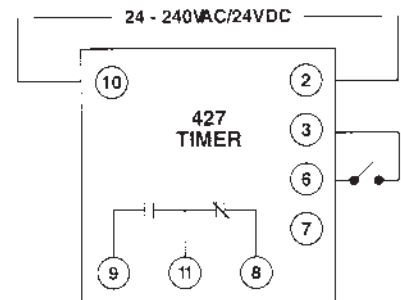
## SIGNAL INTERVAL/OFF-DELAY (MODE C)

When operating power is applied, the output relay energizes and timing starts when the start switch is opened or closed. When the time setting is reached, the output relay de-energizes. The timer restarts from zero if the start switch transitions during the timing cycle.



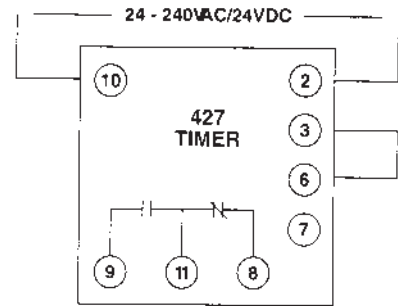
## SIGNAL OFF-DELAY 1 (MODE D)

With power applied, the output relay energizes when the start switch is closed. Timing starts when the start switch is opened. At the end of the time delay, the relay de-energizes and the timer resets.



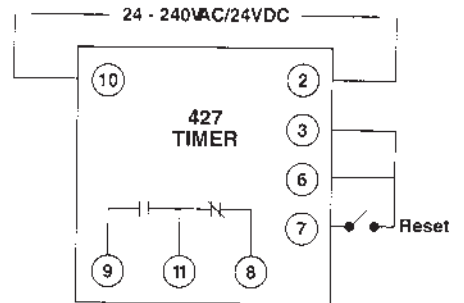
**INTERVAL (MODE E)**

When operating power is applied, the output relay energizes and timing starts. At the end of timing, the relay de-energizes and timing stops. The reset, remove the operating power or enable the reset terminal momentarily.



**CYCLE ONE-SHOT (MODE F)**

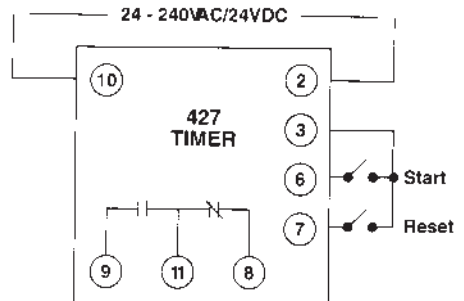
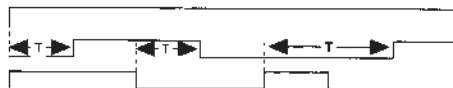
When operating power is applied, the timing cycle starts. When the time setting is reached the output relay energizes and remains energized. If the operating power is still applied, the timer continues timing and when the time setting is reached again, the output relay de-energizes. Reset is accomplished by removing operating power or closing the reset switch.



**SIGNAL ON-DELAY/OFF-DELAY (MODE G)**

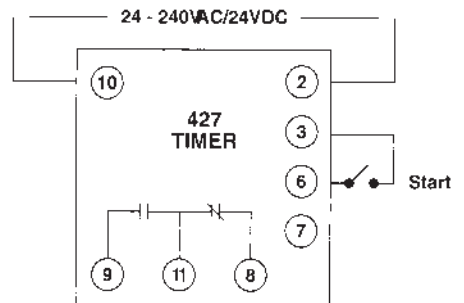
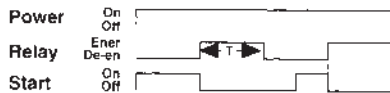
When operating power is applied, the timing cycle starts with the opening or closing of the start switch.

- A. Closing a normally open switch, the timing cycle starts and when the time setting is reached the output relay energizes. Opening the start switch, timing restarts and the relay de-energizes when the time setting is reached.
- B. Using a normally closed start switch, when operating power is applied, the timer begins the above timing cycle immediately



**SIGNAL OFF-DELAY 2 (MODE H)**

With operating power applied, the timing cycle starts and the output relay energizes when the start switch opens. When the time setting is reached, the output relay de-energizes.



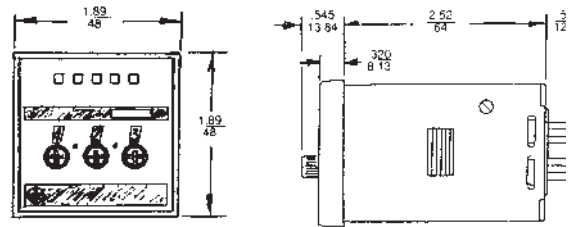
## SPECIFICATIONS

MODEL	MODEL: 427A300F80XX 8 Switch selectable Modes of Operation	
	A	ON-Delay
	B	Repeat Cycle
	C	Signal Interval/OFF-Delay
	D	Signal OFF-Delay 1
	E	Interval
	F	Cycle One Shot
	G	Signal ON-Delay/Off Delay
	H	Signal OFF-Delay 2
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) @ 50°C
CONTACT MATERIAL	Cadmium Silver Oxide	
TEMPERATURE RATING	-18°C to 60°C. (0 to 140°F.)	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230. In addition, the 427A will withstand a voltage surge of 4500 volts for 50 µsec without damage.	
MOUNTING	11-pin plug-in base; mounts in any position with retaining clips.	
	Options: Surface mounting DIN mounting socket Panel-mounting adapter kit Plug-on socket	
	Universal power supply - reverse polarity protected 24 to 240 VAC, 50/60 Hz; (+10%, -20%) 24 VDC (+20%,-20%)	
	AC	Inrush - 1.5 Amps Power required - 1.2 watts
POWER REQUIREMENTS	DC	Maximum ripple @ 100 Hz - 10% Current required - 50 mA Power required - 1.2 watts "F" option - Peak inrush current= 2 Amps @ 24 VDC
	REPEAT ACCURACY	+/-0.1% over all rated voltages (crystal controlled)
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
CONTROL RESET TIME	a	Start: 50ms
	b	Reset: 50ms
	c	Gate: 50ms
WEIGHT	5 oz. (140 g)	

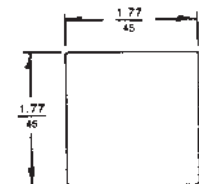
MODEL NUMBER >>>>>>	427A	F	80
Range		300	
0 to 9.99 or 99.9 or 999 SEC., MIN, HR		300	
Voltage & Frequency		F	
24 to 240 VAC (50/60 Hz) and 24 VDC		F	
Arrangement		80	
8 Operating Modes		80	
Features		XX	
Standard plug-in, 11-Pin round		XX	
Special		XX	
Accessories			
11-Pin surface/DIN rail socket	0000-825-86-00		
Hold down for above socket	0405-025-07-00		
Panel mounting bracket	0405-320-02-00		
Plug-in socket kit (11-pin)	0314-260-07-00		
11-Pin panel socket with rear facing terminals	600-3-0012		

## DIMENSIONS (INCHES/MILLIMETERS)

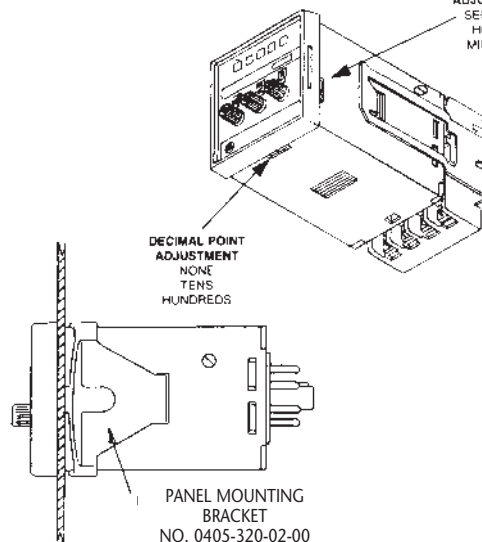
### MULTI-MODE BAR GRAPH DISPLAY TIMERS



11 PIN OPTIONAL SOCKET  
NO. 0000-825-86-00



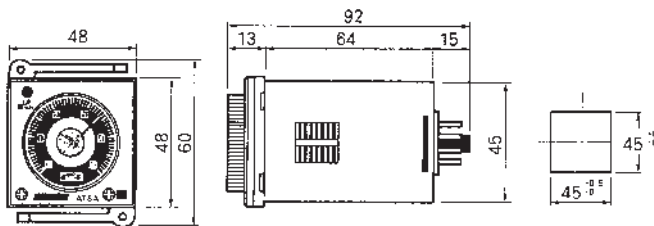
RANGE ADJUSTMENT  
SECONDS  
HOURS  
MINUTES



The AT8 is versatile, cost effective ON-Delay Timer that provides a powerful 5A, 240 VAC relay output. Output is available in two versions; one model with 2 each SPDT maintained contacts, the other with 1 SPDT maintained and 1 SPDT momentary contact. The compact AT8 has 16 time ranges that are all front panel settable.

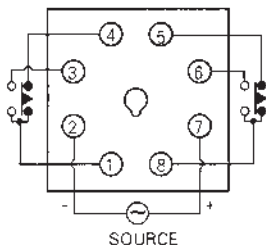
SPECIFICATIONS	
TIMING RANGES	0.05-0.5, 0.1-1.0, 0.5-5, 1-10 SEC 0.05-0.5, 0.1-1.0, 0.5-5, 1-10 MIN 0.05-0.5, 0.1-1.0, 0.5-5, 1-10 HRS 0.5, 1-10, 5-50, 10 -100 hours
OPERATING TEMPERATURE	14° to 140°F (-10° to +60°C)
MOUNTING	Plug-In Base or Front Panel
OPERATING POWER	120 or 240 VAC, ±10%, 50/60 Hz. Other Standard AC and DC Voltages Optionally Available.
POWER CONSUMPTION	10 VA
AT8N POWER REQUIREMENTS	100 to 240 VAC 24 to 240 VDC
RESET TIME	0.5 SEC
TIME SETTING	Front Panel Knob
TIMING MODE	On-Delay
TIMED RELAY OUTPUT	NO: 250 VAC 3A NC: 250 VAC 2A Resistive Load
INSTANTANEOUS RELAY OUTPUT	Model AT8B Only 5 A, 120 VAC, SPDT 3 A, 240 VAC, SPDT
DISPLAY	Analog
TERMINATION	8-Pin Plug-In
WEIGHT	0.32 lb.

DIMENSIONS (MILLIMETERS)

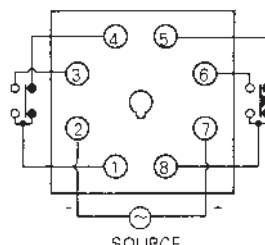


WIRING

• AT8A



• AT8B



ON-Delay Multi-Range Solid-State Timer



- ON-Delay Timing Mode
- 5 Amp Relay Outputs
- Sixteen Time Ranges – From .05 SEC to 100 Hours
- 2 SPDT Outputs, 2 Delayed or 1 Instantaneous and 1 Delayed
- LED Indication of Operation Status
- 48mm X 48mm (1/16 DIN) Front Panel
- Front Panel Settings
- Economically Priced

ORDERING INFORMATION

MODEL NUMBER	Description
AT8N	A ON-Delay
	A1 ON-Delay 1
	B ON-Delay 2
	F Flasher - OFF Time First
	F1 Flasher - ON Time First
	I Interval
AT8B-120	ON-Delay Timer, SPDT Delayed, SPDT Instantaneous, 120 VAC
AT8B-240	ON-Delay Timer, SPDT Delayed, SPDT Instantaneous, 240 VAC
Accessories	
A600-3-0011	Socket-8 Pin, Side Wiring, Bottom Screw Location, 10 Amp
A600-3-0013	Socket-8 Pin, Side Wiring, Top Screw Location, 10 Amp

1/16 DIN Timers // AT8 Series



Multi-Function Multi-Range Timer

- Six Timing Modes
- Sixteen Time Ranges From .05 Sec to 100 Hours
- Power Supply of 24-120 VAC and 24-240 VDC
- LED Indication of Operation Status
- 48mm X 48mm (1/16 DIN) Front Panel
- 5 Amp Relay Output
- Front Panel Settings
- Economically Priced

ORDERING INFORMATION

MODEL NUMBER	Description
AT11DN	DPDT Delayed
AT11EN	SPST Delayed/SPDT Instantaneous
Accessories	
600-3-0012	Socket 11-Pin, Side Wiring, Bottom Screw Location, 10 Amp for panel mounting
600-3-0014	Socket 11-Pin, Side Wiring, Top Screw Location, 10 Amp for DIN-rail and surface mounting

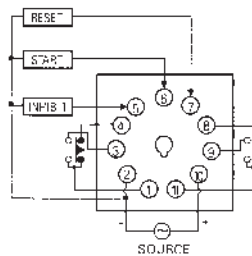
The AT11 is a cost effective timer that has excellent application flexibility with 6 operating modes and 16 time ranges. All front panel, user selectable. Two, 5 Amp, 120 VAC rated, SPDT contacts make the compact AT11 a powerful control instrument. Two models are available; AT11DN which features 2 delayed outputs, and AT11EN with 1 delayed and 1 instantaneous output.

SPECIFICATIONS

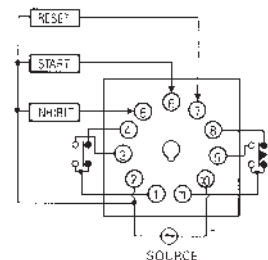
TIMING RANGES	0.05-0.5, 0.1-1.0, 0.5-5, 1-10 SEC
	0.05-0.5, 0.1-1.0, 0.5-5, 1-10 MIN
	0.05-0.5, 0.1-1.0, 0.5-5, 1-10 HRS
	0.5, 1-10, 5-50, 10-100 hours
OPERATING TEMPERATURE	14°F to 140°F (-10° to +60°C)
MOUNTING	Plug-In Base or Front Panel
OPERATING POWER	24-240 VAC/24-240 VDC
POWER CONSUMPTION	10 VA
RESET TIME	0.5 SEC
TIME SETTING	Front Panel Knob
TIMING MODE	See chart on next page.
TIMED RELAY OUTPUTS	3 Amps, 240 VAC
DISPLAY	
TERMINATION	11-Pin Plug-In
WEIGHT	0.33 lb.

DIMENSIONS (MILLIMETERS)

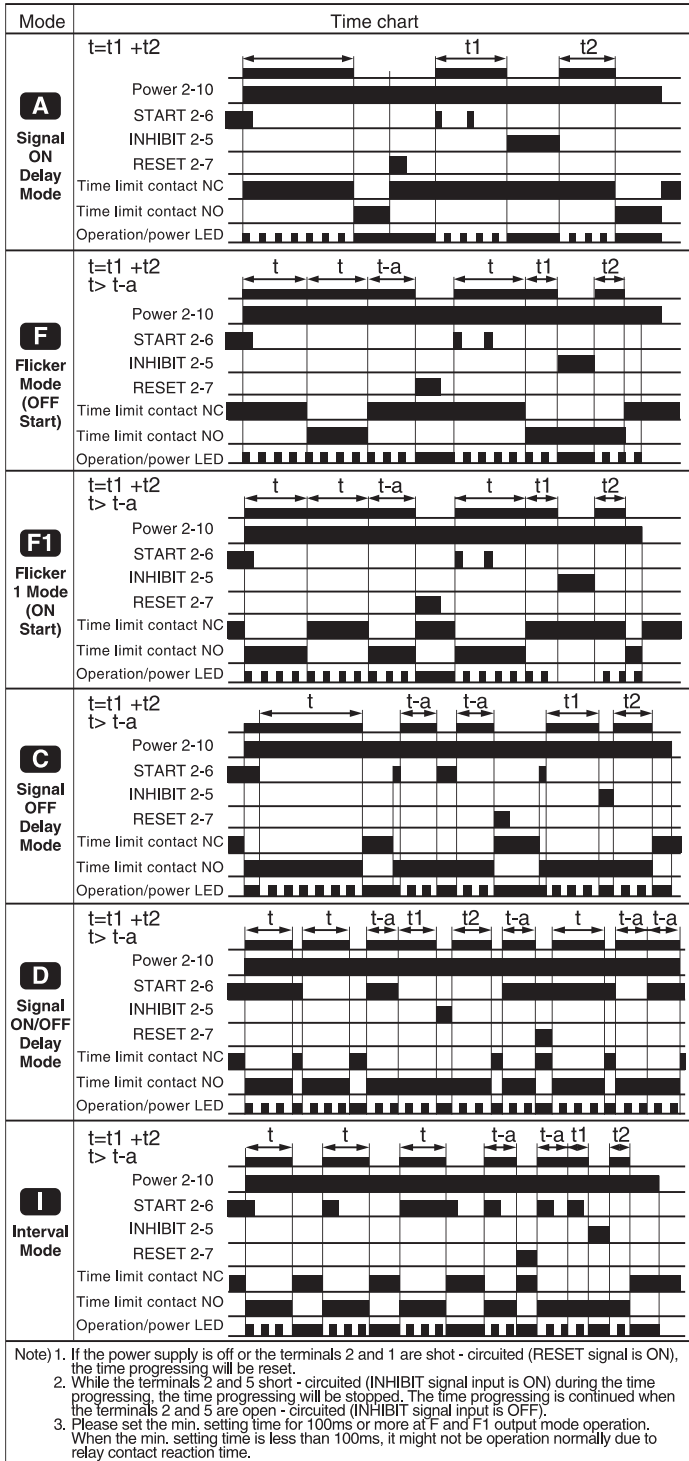
• AT11DN



• AT11EN

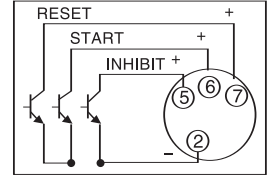
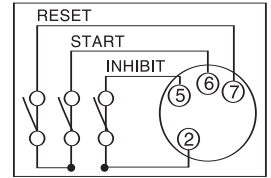


OUTPUT OPERATION MODE



Input signal condition

- Relay contact input:  
Please use gold-plated switches with good contact assurance and short bounding time for contact input.
- NPN open collector transistor input:  
The characteristic of transistor shall be:  
V<sub>ceo</sub> : Min. 25V  
I<sub>c</sub> : Min. 10mA  
I<sub>cb0</sub> : Max. 0.2μA.  
Residual voltage : Max. 0.5V
- Please maintain 50ms for signal width of relay contact and solid state input (START, RESET, INHIBIT)





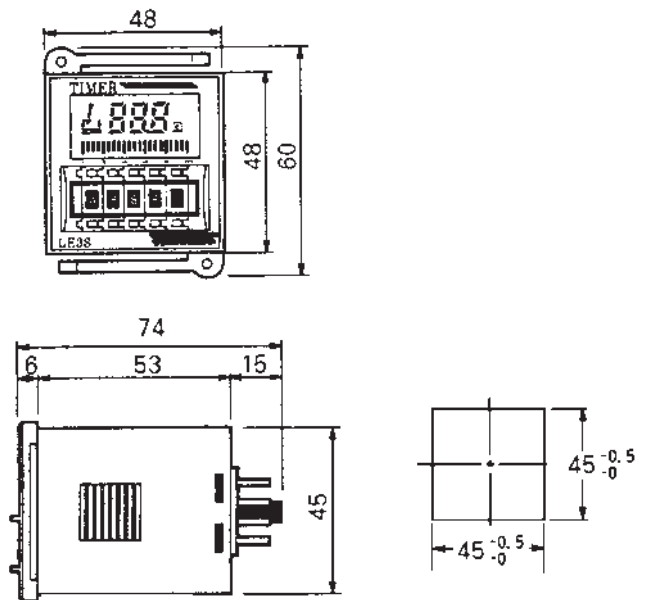
## LCD Multi-Function Multi-Range Digital

- Operating Voltage Flexibility (100-240 VAC or 24-240 VDC)
- Ten Timing Modes
- Ten Timing Ranges
- Three Digit Digital Display
- 0-100% Bar Graph Display
- Graphic Relay Contact Display
- 5 Amp Relay Contacts
- 1/16 DIN Front Panel
- Front Panel Mode/Range Selections
- Economically Priced

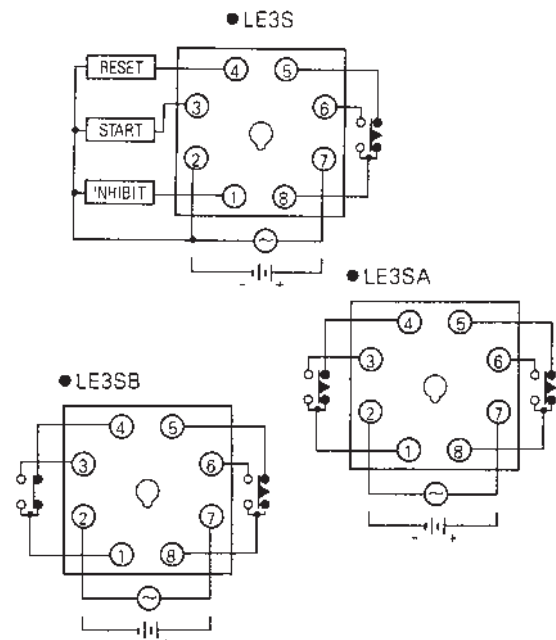
The LE3S is a universal digital timer that features excellent application flexibility with 10 timing ranges and 10 counting modes that are front panel, user selectable. The LCD provides the operator a wide range of information; output relay contact status, time remaining during timing cycle, a bar graph that indicates percentage of elapsed time in the cycle, and time unit. The time preset is indicated on the pushwheel switches as is the time range and timing mode. The universal AC/DC input allows the LE3S to be powered by AC voltage from 90 to 240 VAC (50/60 Hz.) or DC voltage from 24 to 240 VDC. The 1/16 DIN size timer can be front panel mounted using supplied panel mount clips or it can be base mounted using an appropriate 8-Pin socket.

Two ON-Delay only models are also available; Model LE3SA which provides a DPDT timed output, and Model LE3SB which provides a SPDT timed output and a SPDT instantaneous output.

### DIMENSIONS (MILLIMETERS)



### WIRING



### ORDERING INFORMATION

MODEL NUMBER	Description
LE3S	Timer, Multi-Function, LCD 1/16 DIN
LE3SA	Timer, ON-Delay, 110-240 VAC*, 2 DPDT Timed Outputs
LE3SB-120	Timer, ON-Delay, 110 VAC*, 1SPDT Timed, 1SPDT Instant Outputs
	*220 VAC Only—Also Available
Accessories	
A600-3-0011	Socket, 8 Pin, Panel Mount, Bottom Screw
A600-3-0013	Socket, 8 Pin, DIN Rail, Top Screw

## SPECIFICATIONS—ALL MODELS

TIMING RANGES	0.01 SEC to 9.99 SEC
	0.1 SEC to 99.9 SEC
	1 SEC to 999 SEC
	0.1 MIN to 99.9 MIN
	1 MIN to 999 MIN
	0.1 HR to 99.9 HR
	1 HR to 999 HR
	10 HR to 9990 HR
	0 MIN 1 SEC to 9 MIN 59 SEC
0 HR 1 MIN to 9 HR 59 MIN	
TIME SETTING	Front Panel Pushwheel Switch
TIME REPEAT ACCURACY	±0.005% Timing
	±0.03 SEC for Input Signals
	±0.05 SEC on Power Up
CONTROL VOLTAGE INITIATE TIME	0.05 SEC
MEMORY	Non-Volatile Circuitry
POWER CONSUMPTION	5 VA
RELAY MECHANICAL LIFE	10 Million
DISPLAY	LCD Numeric & Graphic
TERMINATION	8-Pin Plug-In
MOUNTING	Front Panel or Plug-In Base
OPERATING TEMPERATURE	14° to 131°F (-10° to +55°C)
WEIGHT	0.3 lbs.

## SPECIFICATIONS—LE3SA ONLY

TIMING MODE	ON-Delay-Sustained Start
SELF RESET	10mS
OPERATING POWER	100-240 VAC Standard
RELAY OUTPUT	2 SPDT Timed

## SPECIFICATIONS—LE3S Only

TIMING MODES (No Switch LE3SA & B)	A	ON-Delay - Sustained Start Resets with Either Reset Input or Removal of Start
	B	Interval Delay - Sustained Start Resets with Either Reset Input or Removal of Start
	C	On-Delay - Momentary or Sustained Start Resets Only With Reset Input
	D	Repeat Cycle - Off Time First - Sustained Start Resets With Either Reset Input or Removal of Start
	E	Repeat Cycle - On Time First - Momentary or Sustained Start - Reset Only With Reset Input
	F	Repetitive Pulse Pulse Output 0.3 SEC - Sustained or Momentary Start - Reset Only With Reset Input
	H	Off Delay Reset With Reset Input or By Applying Start
	K	On/Off Delay An Interval Function - Triggered By Applying Start and Again By Removing Start. Reset Only With Reset Input
	L	One Shot Output (Interval) Sustained or Momentary Start - Reset With Reset Input or By Applying Start.
	N	Time Accumulation With Start Input - Reset Only With Reset Input RESET/START/INHIBIT INPUT
TIME	0.02 SEC MIN	
SELF RESET	30mS	
OPERATING POWER	90-264 VAC, 50/60 Hz., 24-240VDC	
RELAY OUTPUT	SPDT, 5A, 250 VAC	

## SPECIFICATIONS—LE3SB ONLY

TIMING MODE	ON-Delay-Sustained Start	
SELF RESET	10mS	
OPERATING POWER	110 VAC—Standard 220 VAC—Optional	
RELAY OUTPUT	1 SPDT Timed 1 SPDT Instant	