

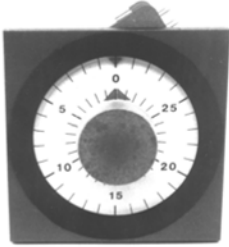


FILE LR28020

# PROGRAM TIMERS FOR PANEL MOUNT INSTALLATIONS

**CAUS**  
FILE E47690

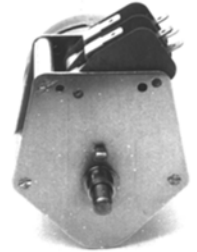
## SERIES FLR



AVAILABLE WITH  
HIGH- STYLED  
BLACK PLASTIC  
FRONT END

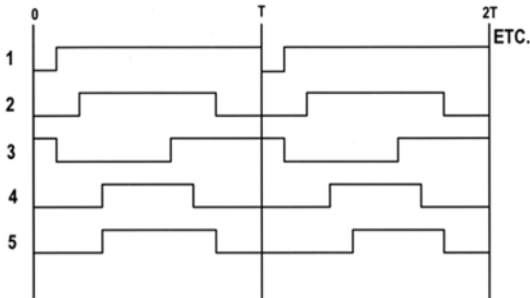
### Repeats a Pre-Established Program of Sequential Events

- Choice among several standard front - panel styling and installation arrangements.
- Interchangeable in field or factory with all known competitive major brands.
- 1 thru 5 pole.
- Switches rated at 10,15 or 21 amperes with .187" or .250" male push-on termination.
- Broad selection of cycle times (time/cycle).
- All international voltages and frequencies.
- Factory will set cams to Customer's timing diagram at no extra charge.



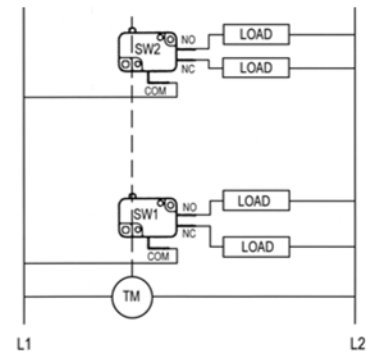
AVAILABLE  
WITHOUT A DIAL

TIMING DIAGRAM  
(TYPICAL)



AVAILABLE WITH  
ALUMINUM DIAL  
AND BEZEL  
ECONOMY FRONT  
END

WIRING DIAGRAM  
(TYPICAL)



### OPERATION

- **FLASHER** – Usually single pole. Repeats ON/OFF cycling.
- **REPEAT CYCLE** – Usually multi-pole. When motor is energized, the timer continuously repeats the preset switching sequence.
- **HOMING (SINGLE CYCLE AND STOP)** - Usually multi-pole. The timer starts at "HOME" (zero position), runs thru exactly 1 preset cycle and stops at "HOME", ready for the next operation.
- **HOMING (MANY CYCLES AND STOP)** - Same as previous, timer is allowed to run thru many cycles, but always completes entirely the last cycle, and terminates at the "HOME" position.
- **HAND – SET INTERVAL TIMER** – The motor is energized when the setting knob is rotated to the desired time. Timing progress is indicated as the dial rotates under power to the "HOME" or zero position at the end of the 1 preset time period.

### HOW TO ORDER: FLR (N) (SW) / (T) (V) (HZ) (O) (S)

SERIES	N = NO. OF POLES	SW = SWITCH TYPE	T = TIME PER CYCLE	V = AC VOLTS	HZ = HERTZ	O = OPTIONS	S = SUFFIX
FLR	1	V1	AS	L = 24V	5 = 50 HZ	CONSTRUCTION OR DIAL SEE OUTLINE DRAWINGS	FACTORY
	2	W2	REQUIRED BY	D = 120V	6 = 60 HZ		ASSIGNED
	3	H2	CUSTOMER	E = 230V	7 = 50-60 HZ		AS REQUIRED
	4		SELECT FROM 1 SEC. TO 30 DAYS				
	5						

**EXAMPLE:** FLR3V1/2MD7A; Series FLR Program Timer, 3PDT Switch, Rated 10 Amp, 2 Minute Time Per Cycle, 120 Volts, 50-60Hz, Without a Dial.

MADE IN USA

American Control Products / Precision Timer  
a division of Prime Technology  
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### PANEL MOUNTED PROGRAM TIMERS

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REV



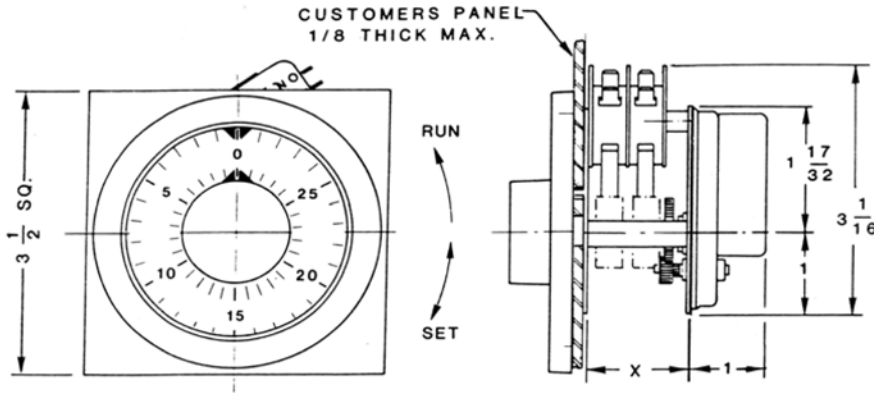
# SERIES FLR OUTLINE DRAWINGS



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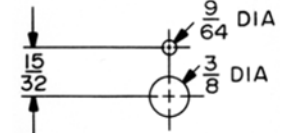
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## INSTALLATION ARRANGEMENT "R"



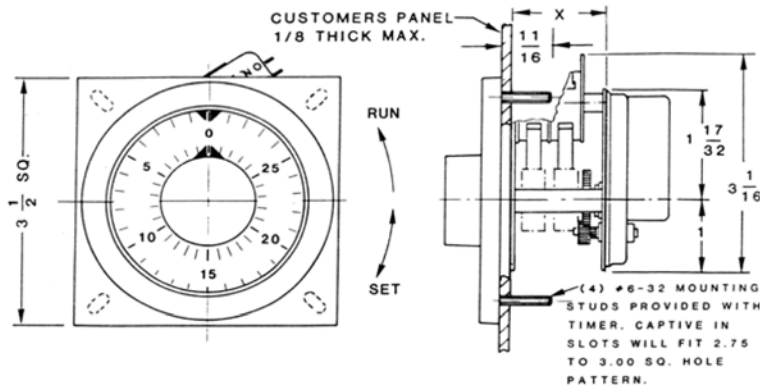
HANDSOME PANEL STYLING FEATURING A BLACK PLASTIC BEZEL WITH CONTRASTING DIAL

REASONABLY PRICED  
INEXPENSIVE TO INSTALL FROM REAR OF PANEL



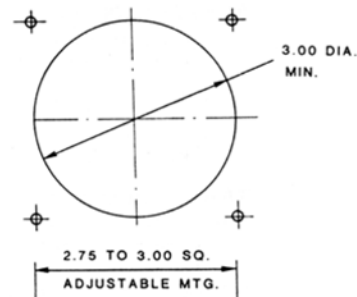
MOUNTING DIMENSIONS

## INSTALLATION ARRANGEMENT "S"



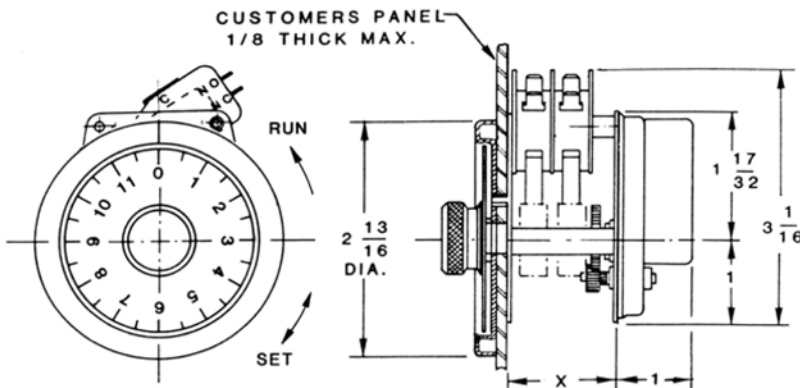
FEATURES A BLACK PLASTIC BEZEL WITH CONTRASTING DIAL AND 4 ADJUSTABLE STUDS

**MOUNTING IS FROM THE FRONT OF THE PANEL**

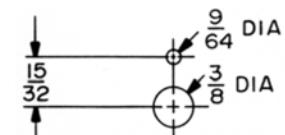


This installation arrangement "S" is interchangeable with many competitive brands.  
 Four # 6-32 studs are provided, captive in slots, and they will adjust freely to match any square pattern from 2.75" square to 3.00" square.  
 The plastic front bezel will cover and hide any existing central body clearance hole up to 3/2" diameter.

## INSTALLATION ARRANGEMENT "A"



LOW COST ALUMINUM DIAL AND BEZEL FRONT END  
VERY INEXPENSIVE TO INSTALL FROM REAR OF PANEL



MOUNTING DIMENSIONS

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# SERIES FLR OUTLINE DRAWINGS

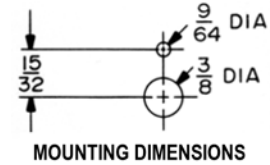
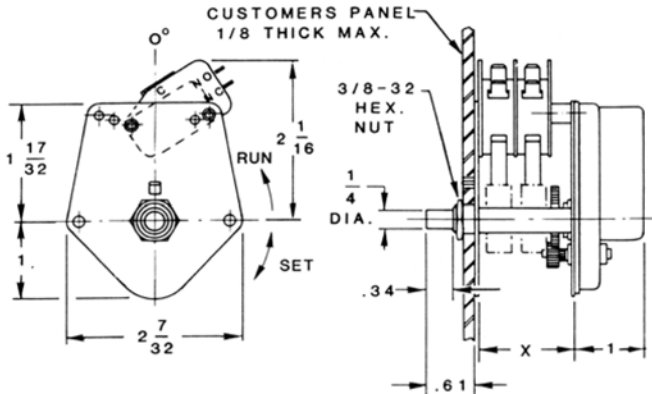


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## INSTALLATION ARRANGEMENT "B"

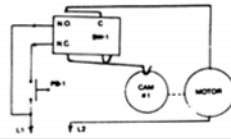
BARE TIMER WITHOUT A DIAL AND BEZEL  
CUSTOMER WILL PROVIDE THE FRONT END DECOR



### How to Wire a Program Timer for Single-Revolution-and-Stop "Self-Homing" Operation

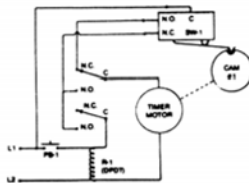
#### I. For Fast Timers

Closure of pushbutton powers timer long enough to advance cam follower out of notch. Timer's switch then powers timer motor until notch is reached again and motor stops.



#### II. For Slow Timers

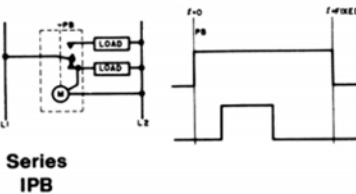
Slower timers may present the problem of excessive hold-down time of the pushbutton. Therefore, a latching relay is used.



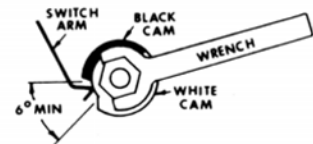
#### III. Integral Pushbutton

Timer with its own integral pushbutton is mounted directly on customer's front panel.

- Save costly wiring.
- See Tech. Bulletin PB.



### How to Adjust ("Set" or "Time") the Cams of a Program Timer



Always prepare an organized and well thought out Timing Diagram for your machine, process, or equivalent. Stipulate tolerances.

Always let our factory do your "timing" for you. This costs you nothing. We are thoroughly equipped. This is tedious, time-consuming work unless you are exceptionally well equipped.

Always set the cams of Program Timers on a bench set-up before installation into your product, including adequate tests and inspections. Never try to do such timing after installation, other than minor adjustments.

Our cams are fully adjustable. Simply hold camshaft from rotating with one wrench and grasp molded hexagonal hub of cam with another wrench. Rotate cam until switch is heard to click (or better to use a Test Light). Make or buy from us a suitable calibration dial, or use a timing clock.

## INSTALLATION ARRANGEMENT "X"

ANY OTHER MOUNTING ARRANGEMENT - We can provide numerous other mounting arrangements and front-end designs. Please ask the factory about any special arrangement needed but not illustrated above.

Number of Poles	Depth - Inches Dimension "X"
1	.8
2	1.3
3	1.7
4	2.1
5	2.6

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# RATINGS AND OPERATIONAL PARAMETERS

## MOTORS

- Permanent magnet synchronous inductor type.
- USA industrial standard pear-shaped configuration.
- UL and CSA approved.
- Enclosed construction.
- Torque rating 30 inch-ounces at 1 RPM.
- Stocked and standard at 120/60.
- Also readily available or stocked for 24/60, 230/60, 24/50, 115/50, and 220/50.
- These motors operate at a speed precisely synchronous with frequency of input power.
- Corrosion resistant.
- Tough, reliable, long lived.
- Reasonable life expectancy exceeding 10,000 hours.
- Fast acceleration. Instant stop.
- Our staff filters all incoming orders to insure adequate motor torque.

### Switches (All switches are UL and CSA approved)

#### V1 – 10 Amperes

- UL rated 10 amperes nominal @ .75 power factor.
- ½ horsepower at 125/250 VAC.
- Enclosed, snap-action, sub-basic size.
- .187 male push-on terminals.
- Form C – SPDT.

#### W2 – 15 Amperes

- UL rated 15 amperes nominal @ .75 power factor.
- ½ horsepower at 125/250 VAC.
- Enclosed, snap-action, sub-basic size.
- .250 Male push-on terminals.
- Form C – SPDT.

#### H2 – 21 Amperes

- UL rated 21 amperes nominal @250VAC.
- 1hp @ 125 VAC, 2hp @ 250VAC.
- Enclosed, snap-action, sub-basic size.
- .250 male push-on terminals.
- Form C – SPDT.

#### E – 25 Amperes

- UL rated 25 amps @ 125,250 or 480 VAC.
- 1 hp @ 125 VAC or 2 hp @ 250 VAC.
- Pilot duty 750 VA @ 125 or 250 VAC.
- Enclosed snap-action, full basic size, # 8 screw terminals.
- Form C – SPDT.
- For restricted uses only.

## Life Expectancy

The life of a switch is a function of the type, magnitude, and number of usages under an applied electrical load. At low electrical load 95% survival is expected at 10,000,000 operations, at full electrical load 95% survival is expected at 150,000 operations, subject to inrush considerations and type of load as to resistive, inductive, or capacitive. Particular attention should be given for high inrush applications such as heaters or lamps as might weld, erode, or cavitate switch contacts. We will gladly assist customers in making a selection.

Camshaft Speed (Time per Cycle)	No. of Switch Operations in One Year	
	Continuous Operation	Fifty 40-hour Weeks
1 sec.	31,557,600	7,200,000
15 sec.	2,103,840	480,000
30 sec.	1,051,920	240,000
1 min.	525,960	120,000
15 min.	35,064	8,000
30 min.	17,532	4,000
1 hr.	8,766	2,000
15 hrs.	584	133
30 hrs.	292	67

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