

# Solid State Timers Type F

Class 9050



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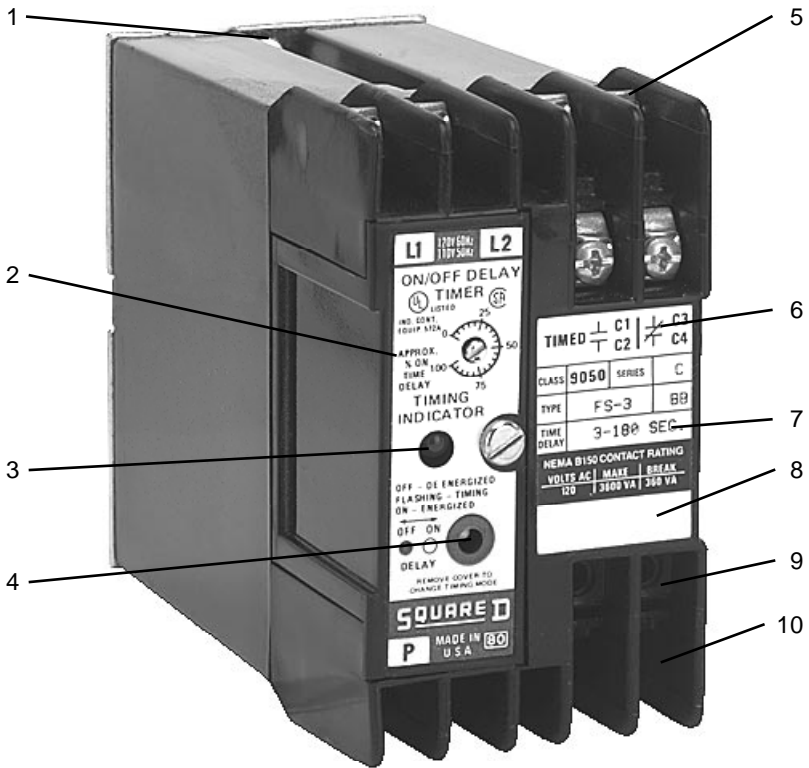
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**Solid State Timers, Type F**

# Solid State Timers, Type F Product Description

Class 9050 Type F solid state timing relays are designed to provide the versatility needed to meet the needs of almost any timing application. Combining the accuracy of solid state timing and the dependability of easy to use hard contact outputs, Class 9050 Type F timing relays provide the best of solid state and electro-mechanical timers.

- 1. Standard Industrial Control Relay Mounting
- 2. Removable Timer Cover Protects Time Delay and Mode Setting.
- 3. LED Timing Indicator
- 4. Convertible Time Delay Mode Shows Through Cover



- 5. One N.O. and one N.C. Timed NEMA B150 Hard Output Contacts (10 Ampere Continuous)
- 6. Terminals Clearly Marked
- 7. Five Timing Ranges from 0.05 Seconds to 10 Hours
- 8. Marking Area (Type FT Only)
- 9. Self-Lifting Pressure Wire Connectors
- 10. Optional Instantaneous NEMA B150 Hard Output Contacts (10 Ampere Continuous) — Types FS & FT only

Type FS, FSR, and FT timing relays feature solid state accuracy and the flexibility and isolation of hard contacts output. Type FS and FT timers offer convertible On-Off Delay and timing range of up to 10 hours. Timing indication is provided by an LED that flashes during timing, glows steadily after timing and is off when the timer is de-energized.

The Type FSR Repeat Cycle timer provides two dials for separately adjustable On-Off Delay times. An indicating light is on when the output relay is energized.



## Solid State Timers, Type F

### Application and General Information



#### Type FS — Solid State Timing Relay

- Industrial Housing
- IN/OUT Wiring
- Nonreplaceable Output Contacts
- Convertible ON/OFF Delay
- 1 N.O. & 1 N.C. Instantaneous Contacts Available
- Five Different Timing Ranges
- Transient Protection
- Status Indicator



#### Type FSR — Repeat Cycle Timing Relay

- Industrial Housing
- Separately Adjustable ON and OFF Times
- May Take the Place of 2 Separate Timers
- IN/OUT Wiring
- Nonreplaceable Output Contacts
- Five Different Timing Ranges
- Transient Protection
- Status Indicator



#### Type FT — Solid State Timing Relay

- Industrial Housing
- Replaceable Output Contacts
- Automotive Approval
- Straight Through Wiring
- Convertible ON/OFF Delay
- 1 N.O. & 1 N.C. Instantaneous Contacts Available
- Captive Terminal Screws
- Time Delay Adjustment Lock Nut
- Five Different Timing Ranges
- Transient Protection
- Status Indicator

#### Types FS, FSR, and FT:



File  
CCN

E42259  
NKCR

#### Types FS and FSR:



File  
Class

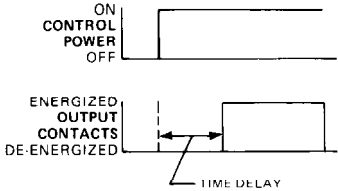
LR53531-12  
321103



## TIMING MODES

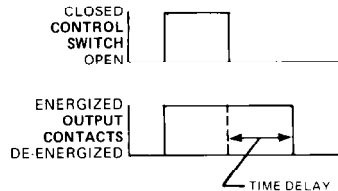
### On Delay

When control power is applied, the time delay begins. At the end of the time delay, the output contacts energize. To reset, remove control power.



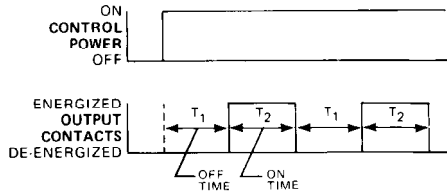
### Off Delay

Control power is applied continuously. When the control switch is closed, the output contacts energize. Reopening the control switch begins the time delay. At the end of the time delay, the output contacts de-energize.



### Repeat Cycle

When control power is applied, the T1 off-time begins. At the end of the T1 off-time, the output contacts energize and the T2 on-time begins. At the end of the T2 on-time, the output contact de-energizes and the T1 off-time begins again. This cycle will continue until control power is removed.



**Timer Operating Status Table**

Timing Mode	Timing Cycle Status	Initiating Contact	Indicating Light	Time Delay N.O. Contact	Inst. N.O. Contact
On Delay	Before Timing	Open	Off	Open	Open
	During Timing	Closed	Flashing	Open	Closed
	After Timing	Closed	On	Closed	Closed
Off Delay	Before Timing	Closed	On	Closed	Closed
	During Timing	Open	Flashing	Closed	Open
	After Timing	Open	Off	Open	Open
Repeat Cycle	Before Timing	Open	Off	Open	N.A.
	During Timing	Closed	On Off	Closed Open	N.A. N.A.



# Solid State Timers, Type F Specifications

## Contact Ratings

AC Rating (120 Vac)				DC Rating (24 Vdc)		
NEMA B 150 Inductive 35% Power Factor				Resistive 75% Power Factor	Inductive	Resistive
Make		Break		Continuous Amperes	Make or Break Amperes	Make or Break and Continuous Amperes
Amps	VA	Amps	VA			
30	3600	3	360	5	7	7

## Dial

Marked in percent of maximum time delay.

## Surface Mounting Requirements

Use two #8-32 mounting screws. The Type F timers also mount on 8501 Type XM mounting track.

## Input Compatibility

The Type F timers are not compatible with 2-wire AC input sensors. A hard contact relay (i.e., general purpose relay) must be interposed.

## Replacements Output Relays

Class 9998 Type TR1 used for the Class 9050 Type FT timer only.

## Enclosure

Separately packed NEMA Type 1 sheet steel enclosure. Class 9991 Type UE7.

## Repeat Accuracy:

$\pm 1\%$  plus  $\pm 10$  ms at constant voltage and temperature.  $\pm 3\%$  plus  $\pm 10$  ms over specified voltage and temperature range.

## Reset Time:

On Delay: 50 ms. Off Delay: 50 ms. Repeat Cycle: Not applicable.

## Operating Voltage:

Dual rated 120V 60Hz and 110V 50 Hz CONTINUOUS POWER IS REQUIRED (L1-L2 permanently connected to ac supply).

## Voltage Range:

+10%, -15% of nominal.

## Burden:

5.5VA maximum.

## Operating Temperature Range:

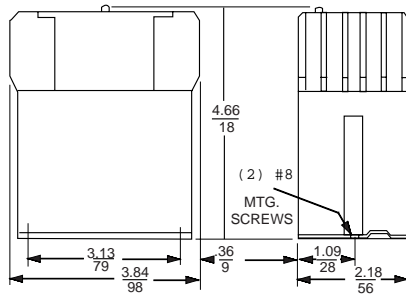
-29°C to +60°C (-20°F to 140°F)

## Terminals:

Self-lifting pressure wire connectors will accept up to two #12, #14 or #16 solid or stranded wires. The terminals will accept ring lugs or spade lugs up to 5/16 inch wide.

# Solid State Timers, Type F Dimensions, Selection and Wiring Diagrams

## APPROXIMATE DIMENSIONS

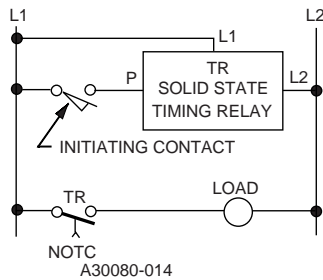


Dual Dimensions: Inches  
Millimeters

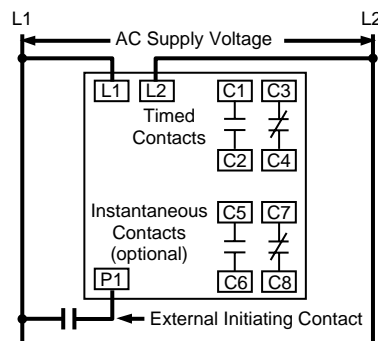
## ORDERING INFORMATION

Mode of Operation	Number of Contacts				Timing Range	Type	
	Timed		Instantaneous				
	N.O.	N.C.	N.O.	N.C.			
Convertible On-Off Delay (Timers are shipped in the On Delay mode)	1	1	0	0	0.05–1 second 0.3–30 seconds 3.0–180 seconds 0.1–10 minutes 0.1–10 hours	FS1 FS2 FS3 FS4 FS5	FT1 FT2 FT3 FT4 FT5
	1	1	1	1	0.05–1 second 0.3–30 seconds 3.0–180 seconds 0.1–10 minutes 0.1–10 hours	FS11 FS12 FS13 FS14 FS15	FT11 FT12 FT13 FT14 FT15
Repeat Cycle	1	1	0	0	0.05–1 second 0.3–30 seconds 3.0–180 seconds 0.1–10 minutes 0.1–10 hours	FSR1 FSR2 FSR3 FSR4 FSR5	

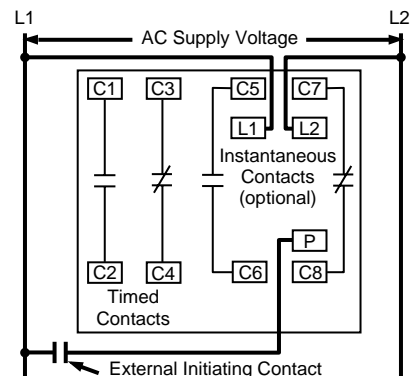
## TYPICAL ELEMENTARY DIAGRAM



## WIRING DIAGRAM





Type FT



Type FS and FSR



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