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FEATURES

- C/MOS Microcontroller Circuitry
- Time Delays to 1000 Minutes
- No First Cycle Effect
- Encapsulated to Withstand Harsh Environment
- 0.5% Repeat Accuracy
- Seven Different Modes of Operation
- SPDT Relay Output Rated 10 Amps, 1/4HP @ 125 VAC
- Fixed or Local Adjust Time Delays
- Small Size
- UL/cUL Recognized

SPECIFICATIONS

1. Time Delay

- 1.1 Type: C/MOS Microcontroller Circuitry
- 1.2 Range: From 0.05 Seconds to 1000 Minutes
Fixed Delays Available (See Time Delay Range Chart)
- 1.3 Repeat Accuracy: $\pm 0.5\%$ Under Fixed Conditions
- 1.4 Setting Accuracy: $\pm 10\%$
- 1.5 Reset Time: 50 Milliseconds Maximum
- 1.6 Reset Time: 100 Milliseconds During Timing
50 Milliseconds After Timing
- 1.7 Time Delay vs. Voltage and Temperature: $\pm 2\%$

2. Input

- 2.1 Operating Voltage: 24, 120 & 230 VAC, 12 & 24/28 VDC
- 2.2 Tolerance: $\pm 20\%$ of Nominal
- 2.3 Frequency 50 - 60 Hertz

3. Output

- 3.1 Type: Electromechanical Relay
- 3.2 Form: SPDT
- 3.3 Rating: 10 Amperes, 1/4HP N.O. @ 125/240 VAC
5 Amperes, 1/4HP N.C. @ 125/240 VAC
- 3.4 Life: Electrical - Full Load - 100,000 Operations
Mechanical - 10,000,000 Operations

4. Protection

- 4.1 Transient: ± 1500 Volts for 150 Microseconds
- 4.2 Polarity: DC Units are Reverse Polarity Protected
- 4.3 Dielectric Breakdown: 1500 Volts RMS Minimum

5. Mechanical

- 5.1 Mounting: One #8 or #10 Screw
- 5.2 Termination: 1/4" Quick Connect Terminals
- 5.3 Style: Surface Mount/Encapsulated

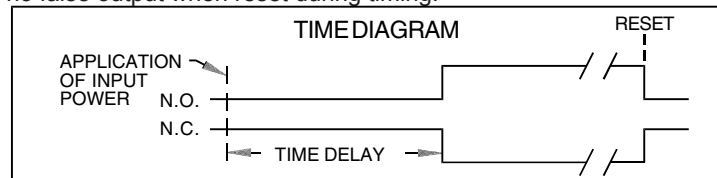
6. Environmental

- 6.1 Operating Temperature: -40°C to $+85^{\circ}\text{C}$
- 6.2 Storage Temperature: -40°C to $+85^{\circ}\text{C}$
- 6.3 Humidity: 95% Relative Non-Condensing

MODE OF OPERATION

DELAY ON MAKE

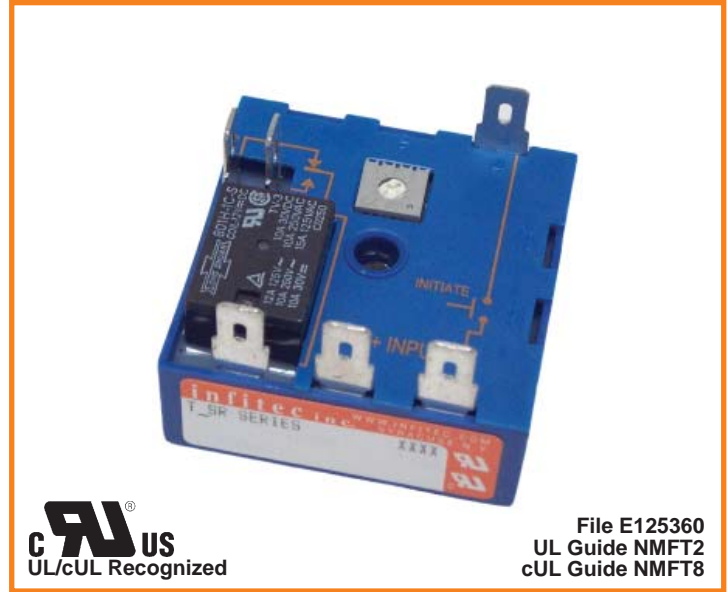
Upon application of power to the input terminals, the time delay begins. At the completion of the pre-selected time delay, the output contact transfers. Reset is accomplished by removal of input power. There is no false output when reset during timing.



SERIES

TMSR

TSR SERIES DIGITAL ENCAPSULATED TIME DELAY RELAY MODULES



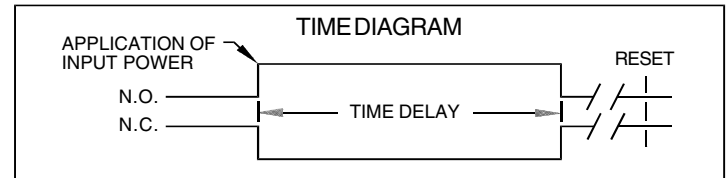
UL/cUL Recognized

File E125360
 UL Guide NMFT2
 cUL Guide NMFT8

INTERVAL

TISR

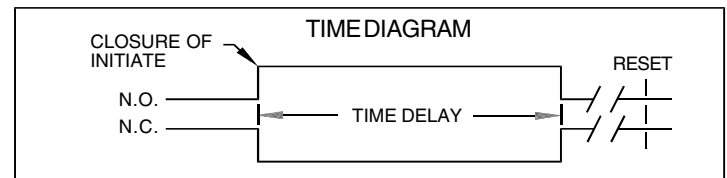
Upon application of power to the input terminals, the output contact immediately transfers and the time delay begins. At the completion of the pre-selected time delay, the output contact reverts to its original position. Reset is accomplished by removal of input power.



SINGLE SHOT

TSSR

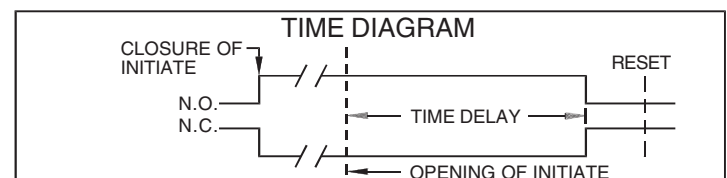
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contact transfers and the time delay begins. At the completion of the pre-selected time delay period, the output contact reverts to its original position. Removal of input power will reset the control.



DELAY ON BREAK

TBSR

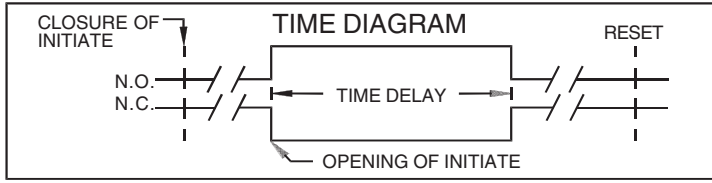
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch the output contact transfers and remains transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the completion of the pre-selected delay period the output contact reverts to its original position. Closure of initiate during timing will reset the delay period. removal of input power will reset the control.



TRAILING EDGE TRIGGERED

TTSR

Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, nothing happens. When the initiate switch is opened, the time delay begins and the output contact transfers. At the completion of the pre-selected delay period the contact reverts to its original position. Removal of input power will reset the control. If the initiate switch is closed during timing, the output contact reverts to its original position and the time delay is reset.

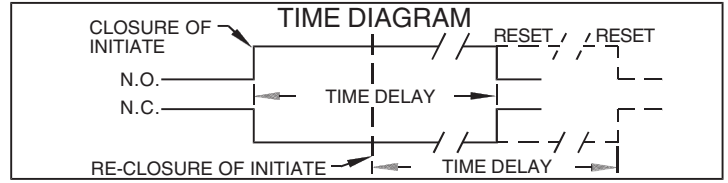


RETRIGGERABLE ONE-SHOT

TOSR

Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contact transfers and the time delay begins. At the completion of the pre-selected delay period, the output contact reverts to its original position.

NOTE: Momentary or maintained closure of initiate switch during timing will reset the time delay.



ON/OFF RECYCLE

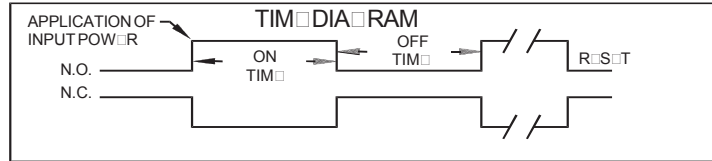
TRSR

Upon application of power to the input terminals, the ON delay begins and the output contact transfers. Upon completion of the ON delay, the output contact reverts to its original position and the OFF delay begins. At the completion of the OFF delay, the output contact again transfers and the cycle repeats. Reset is accomplished by the removal of input power.

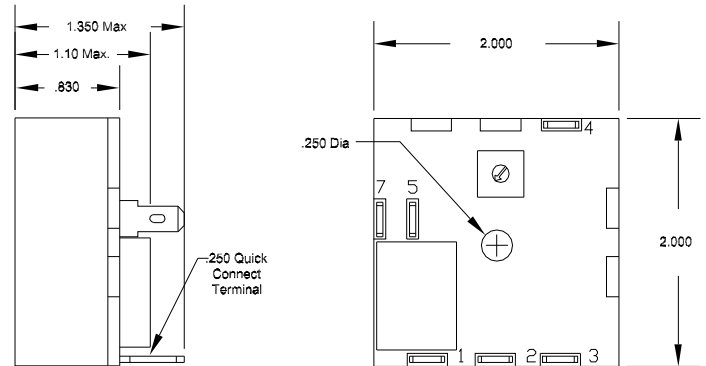
OFF/ON RECYCLE

TRSR

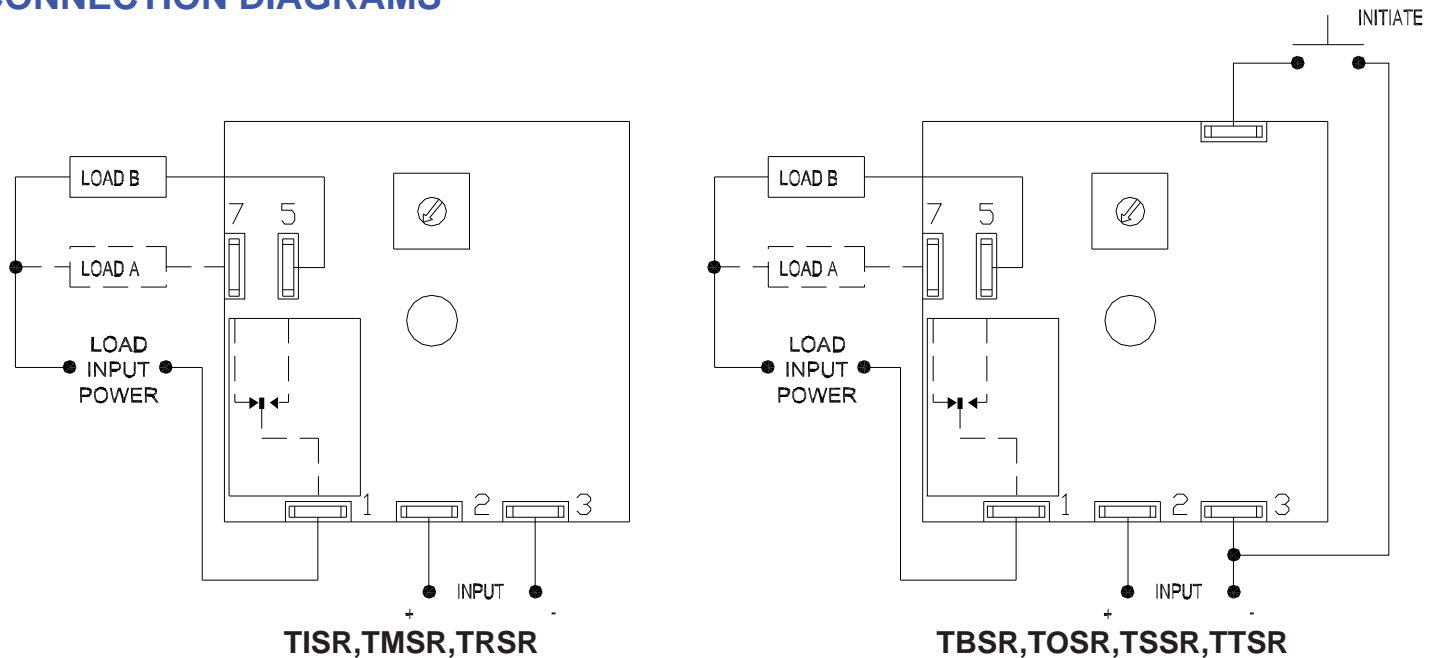
Inverse of ON/OFF Recycling.



DIMENSIONS



CONNECTION DIAGRAMS



LOAD A = AUXILIARY LOAD (off when Load B is on)

ORDERING INFORMATION

SERIES	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY RANGE
TBSR	1 - 12 VDC	0 - Local Adjustment	See Time Delay Range Chart
TISR	2 - 24/28 VDC	1 - Factory Fixed	
TMSR	3 - 5 VDC		TRSR ONLY
TOSR	4 - 24 VAC		TIME DELAY RANGE
TRSR	5 - 120 VAC		1 - On Time First
TSSR	6 - 230 VAC		2 - Off Time First
TTSR	9 - 36 VDC		See Time Delay Range Chart
			NOTE: First and Second Delays are equal.