

## B SERIES BINARY DIGITAL PLUG-IN TIME DELAY RELAY

### FEATURES

- C/MOS Digital Circuitry
- Delays, Switch Selectable In Three Setting Ranges
- 1% Setting Accuracy
- .1% Repeat Accuracy
- Four Modes Of Operation
- No First Cycle Effect
- Wide Voltage Selection 24-230 VAC, 12-110 VDC
- 10 Ampere DPDT Output Rating
- LED Timing Indication
- Octal, 11 Pin, Stab/Square Base Plug-In Termination
- Rocker Type Time Delay Adjustment Switches For Positive Switch Settings

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: Three ranges available. Setting of the delay is accomplished via a 10 position dip switch located on the control's top surface. The required delay is selected by the addition of individual switch delays set in the on position. (See ordering information)
- 1.3 Repeat accuracy:  $\pm 1\%$  under fixed conditions
- 1.4 Setting accuracy:  $\pm 1\%$
- 1.5 Reset time: 50 milliseconds maximum
- 1.6 Recycle 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 & 110 VDC
- 2.2 Tolerance:  $\pm 20\%$  of nominal
- 2.3 Frequency: 50 - 60 Hertz

#### 3. Output.

- 3.1 Type: Electromechanical relay
- 3.2 Form: DPDT or SPDT (see connection diagram)
- 3.3 Rating: 10 amperes resistive @ 120 VAC
- 3.4 Life: Electrical - full load - 1,000,000 operations  
Mechanical - 10,000,000 operations

#### 4. Protection.

- 4.1 Transient:  $\pm 1500$  volts for 150 microseconds
- 4.2 Polarity: D.C. units are reverse polarity protected
- 4.3 Dielectric breakdown: 1500 volts RMS minimum

#### 5. Mechanical.

- 5.1 Mounting: Plug-in
- 5.2 Termination: Octal, 11 pin or stab/square base plug-in

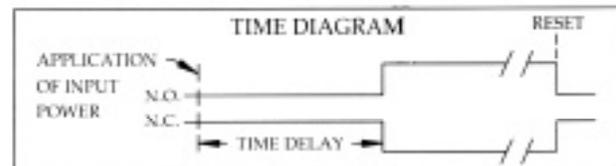
#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$



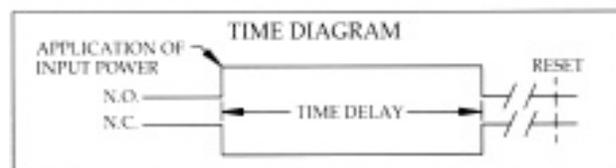
### MODE OF OPERATION - SERIES DELAY ON MAKE - BMR

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



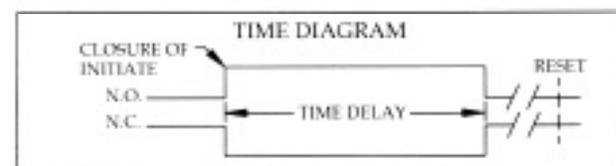
### INTERVAL - BIR

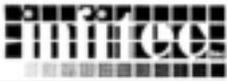
Upon application of power to the input terminals, the output contacts immediately transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Reset is accomplished by removal of input power.



### SINGLE SHOT - BSR

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 contacts transfer and the time delay begins. At the completion of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.





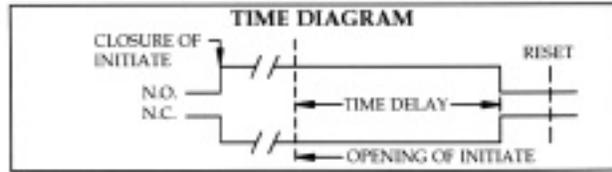
B SERIES

# 10

# TIMERS & FLASHERS

## DELAY ON BREAK - BBR

Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, the output contacts transfer and remain transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the end of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.



### DIMENSIONS

Combine Closed Switches To Select Time Delay

LED

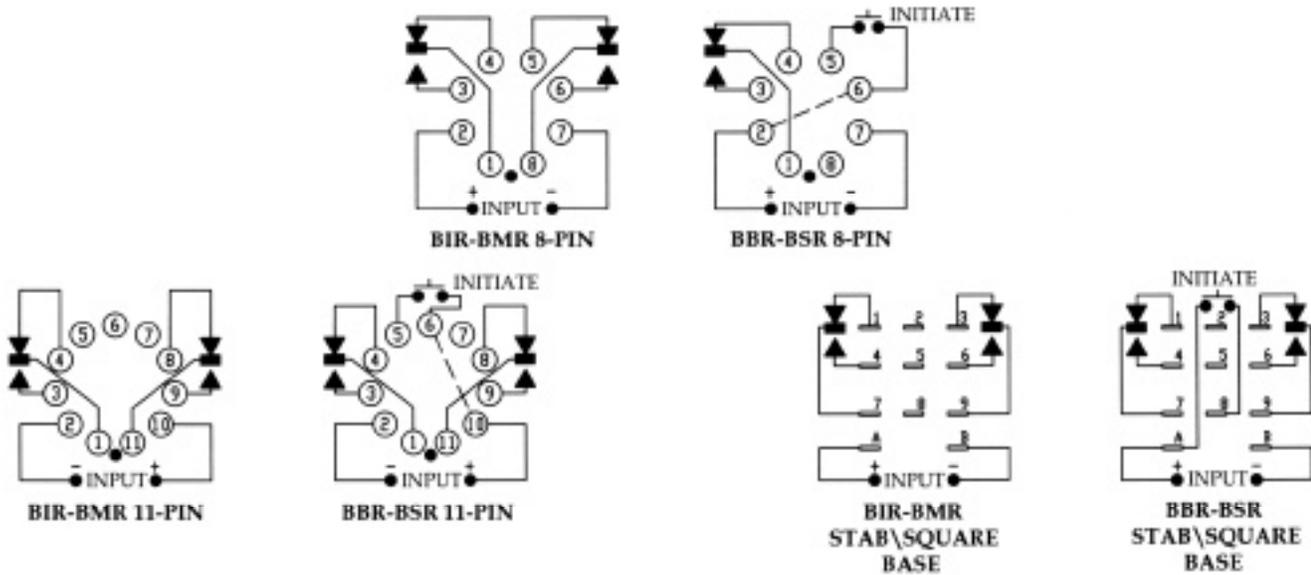
10 Position Switch

### DELAY SETTINGS

OFF	ON	OFF	ON	OFF	ON
.1	<input type="checkbox"/>	1	<input type="checkbox"/>	10	<input type="checkbox"/>
.2	<input type="checkbox"/>	2	<input type="checkbox"/>	20	<input type="checkbox"/>
.4	<input type="checkbox"/>	4	<input type="checkbox"/>	40	<input type="checkbox"/>
.8	<input type="checkbox"/>	8	<input type="checkbox"/>	80	<input type="checkbox"/>
1.6	<input type="checkbox"/>	16	<input type="checkbox"/>	160	<input type="checkbox"/>
3.2	<input type="checkbox"/>	32	<input type="checkbox"/>	320	<input type="checkbox"/>
6.4	<input type="checkbox"/>	64	<input type="checkbox"/>	640	<input type="checkbox"/>
12.8	<input type="checkbox"/>	128	<input type="checkbox"/>	1280	<input type="checkbox"/>
25.6	<input type="checkbox"/>	256	<input type="checkbox"/>	2560	<input type="checkbox"/>
51.2	<input type="checkbox"/>	512	<input type="checkbox"/>	5120	<input type="checkbox"/>

STYLE L Ex. 32.9 Sec.      STYLE S Ex. 329 Sec.      STYLE H Ex. 3290 Sec.

## CONNECTION DIAGRAM



## ORDERING INFORMATION

SERIES	BASE STYLE	INPUT VOLTAGE	DELAY SETTING
BBR	1 - Octal Plug-In (8 Pin)	1 - 12 VDC	L - Low Range, .1 to 102.3 Seconds
BIR		2 - 24/28 VDC	S - Standard Range, 1 to 1023 Seconds
BMR	2 - 11 Pin Plug-In	3 - 110 VDC	H - High Range, 10 to 10230 Seconds
BSR	3 - 11 Pin Stab/Square Base	4 - 24 VAC	
		5 - 120 VAC	
		6 - 230 VAC	

## C SERIES DIGITAL PLUG-IN TIME DELAY RELAY

### FEATURES

- C/MOS Digital Circuitry
- Time Delays To 1000 Minutes
- No First Cycle Effect
- .5% Repeat Accuracy
- 2% Stability Over Voltage And Temperature
- Wide Voltage Selection 24-230 VAC, 12-110 VDC
- Octal, 11 Pin, Stab/Square Base Plug-In Termination
- Five Modes Of Operation

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: From .05 seconds to 1000 minutes. Fixed delays available.
- 1.3 Repeat accuracy:  $\pm 5\%$  under fixed conditions
- 1.4 Setting accuracy:  $\pm 10\%$
- 1.5 Reset time: 100 milliseconds maximum,
- 1.6 Recycle 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 & 110 VDC
- 2.2 Tolerance:  $\pm 20\%$  of nominal
- 2.3 Frequency: 50 - 60 Hertz

#### 3. Output.

- 3.1 Type: Electromechanical relay
- 3.2 Form: DPDT or SPDT (see connection diagram)
- 3.3 Rating: 10 amperes resistive @ 120 VAC
- 3.4 Life: Electrical - full load - 1,000,000 operations  
Mechanical - 10,000,000 operations

#### 4. Protection.

- 4.1 Transient:  $\pm 1500$  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: Plug-in
- 5.2 Termination: Octal, 11 pin or stab/square base plug-in

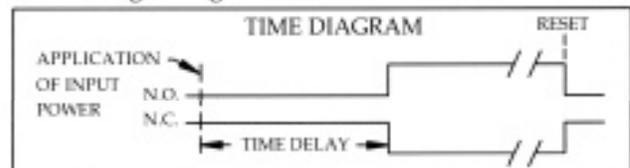
#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$



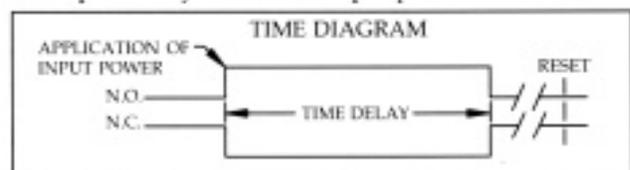
### MODE OF OPERATION - SERIES DELAY ON MAKE - CMR

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



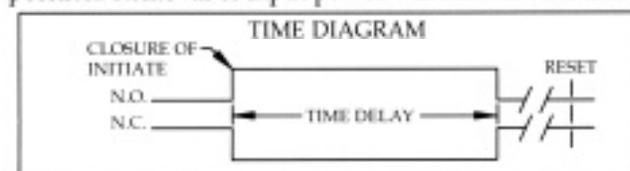
### INTERVAL - CIR

Upon application of power to the input terminals, the output contacts immediately transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Reset is accomplished by removal of input power.



### SINGLE SHOT - CSR

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 contacts transfer and the time delay begins. At the completion of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.

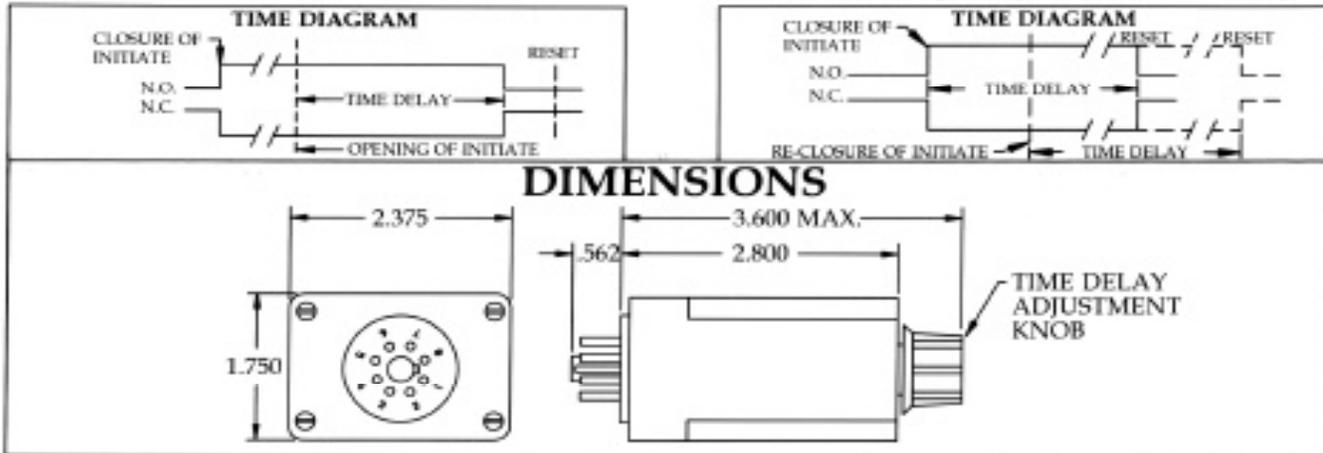


## DELAY ON BREAK - CBR

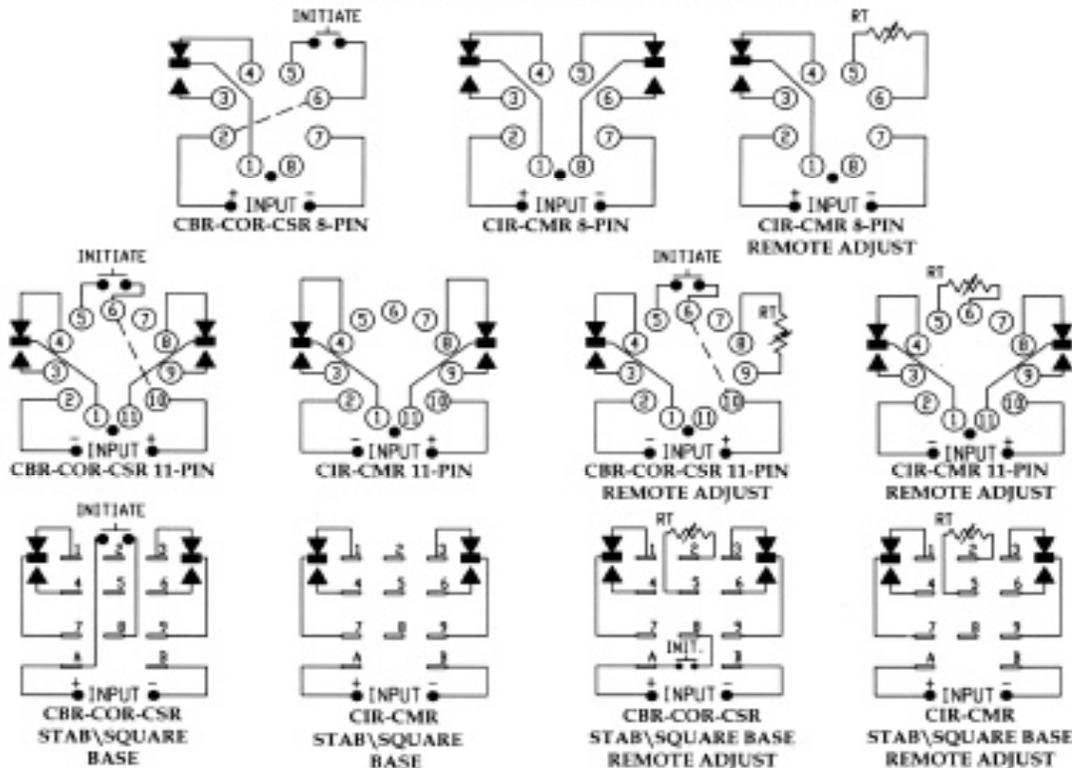
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, the output contacts transfer and remain transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the end of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.

## RETRIGGERABLE ONE-SHOT - COR

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 contacts transfer and the time delay begins. At the completion of the pre-selected time delay the output contacts revert to their original position. **NOTE:** Momentary or maintained closure of initiate switch during timing will reset the time delay.



## CONNECTION DIAGRAM



## ORDERING INFORMATION

SERIES	BASE STYLE	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY RANGE
CBR CIR CMR COR CSR	1 - Octal Plug-In (8 Pin) 2 - 11 Pin Plug-In 3 - 11 Pin Stab/Square Base	1 - 12 VDC 2 - 24/28 VDC 3 - 110 VDC 4 - 24 VAC 5 - 120 VAC 6 - 230 VAC	0 - Knob 1 - Fixed 2 - Remote Adjustment <b>Note:</b> CBR, COR & CSR not available in Base Style 1 3 - Lockshaft	Call For Available Time Delay Ranges

## B SERIES BINARY DIGITAL ENCAPSULATED TIME DELAY MODULES

### FEATURES

- C/MOS Digital Circuitry
- Three Modes Of Operation
- .5% Repeat Accuracy
- Wide Voltage Selection 24-230 VAC
- No First Cycle Effect
- Output Rated At 1 Ampere Continuous - 10 Amperes Inrush
- Rocker Type Time Delay Adjustment Switches For Positive Switch Settings

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: Three ranges available. Setting of the delay is accomplished via a 10 position dip switch located on the control's top surface. The required delay is selected by the addition of individual switch delays set in the on position. (See ordering information)
- 1.3 Repeat accuracy:  $\pm 5\%$  under fixed conditions
- 1.4 Setting accuracy  $\pm 10\%$
- 1.5 Reset time: 50 milliseconds maximum
- 1.6 Recycle 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
- 2.2 Tolerance:  $\pm 20\%$  of nominal
- 2.3 Frequency: 50 - 60 Hertz

#### 3. Output.

- 3.1 Type: Solid state
- 3.2 Form: SPST
- 3.3 Rating: 1 ampere (20 milliamperes minimum) 10 ampere inrush
- 3.4 Life: 100,000,000 operations minimum under full load

#### 4. Protection.

- 4.1 Transient:  $\pm 1500$  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

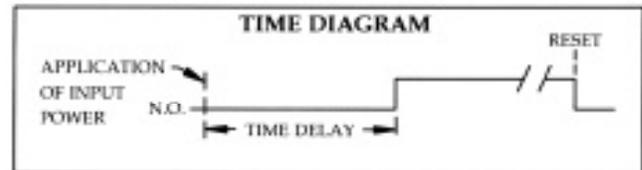
#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$



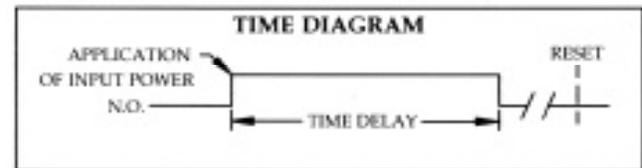
### MODE OF OPERATION - SERIES DELAY ON MAKE - BMS

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.



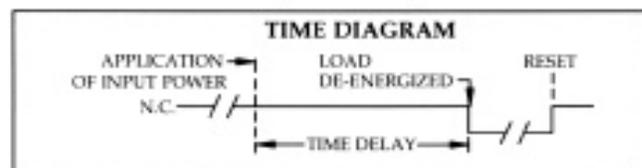
### INTERVAL - BIS

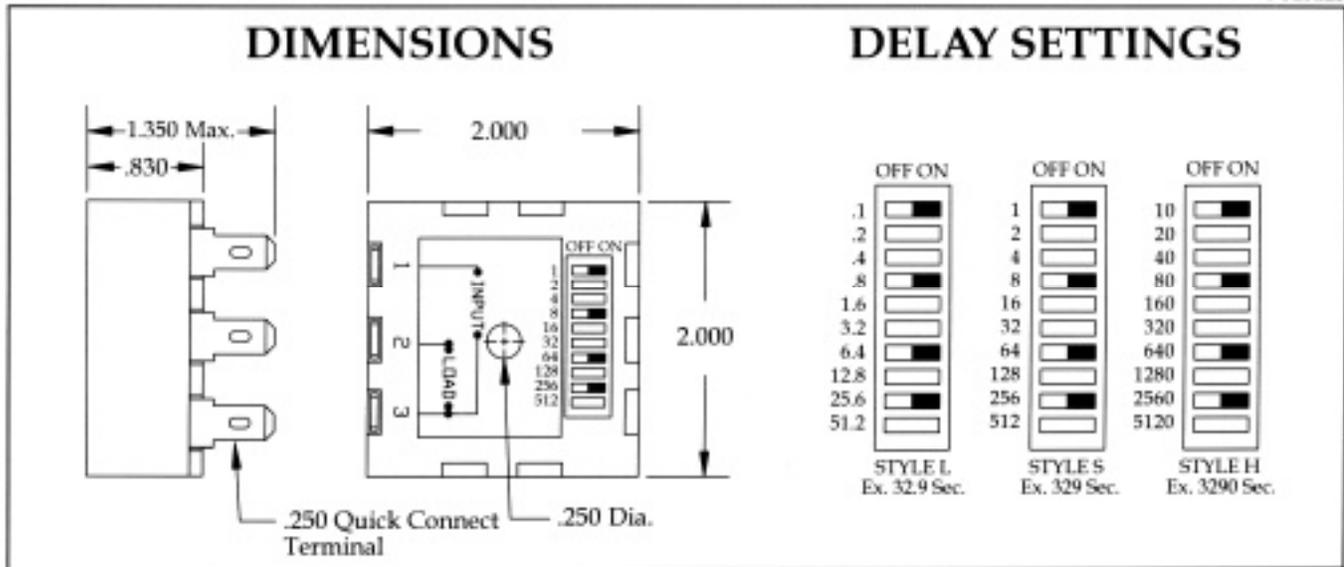
Upon application of power to the input terminals, the output contact immediately transfers and the time delay begins. At the completion of the pre-selected time delay, the output contact reverts to its original position. Reset is accomplished by removal of input power.



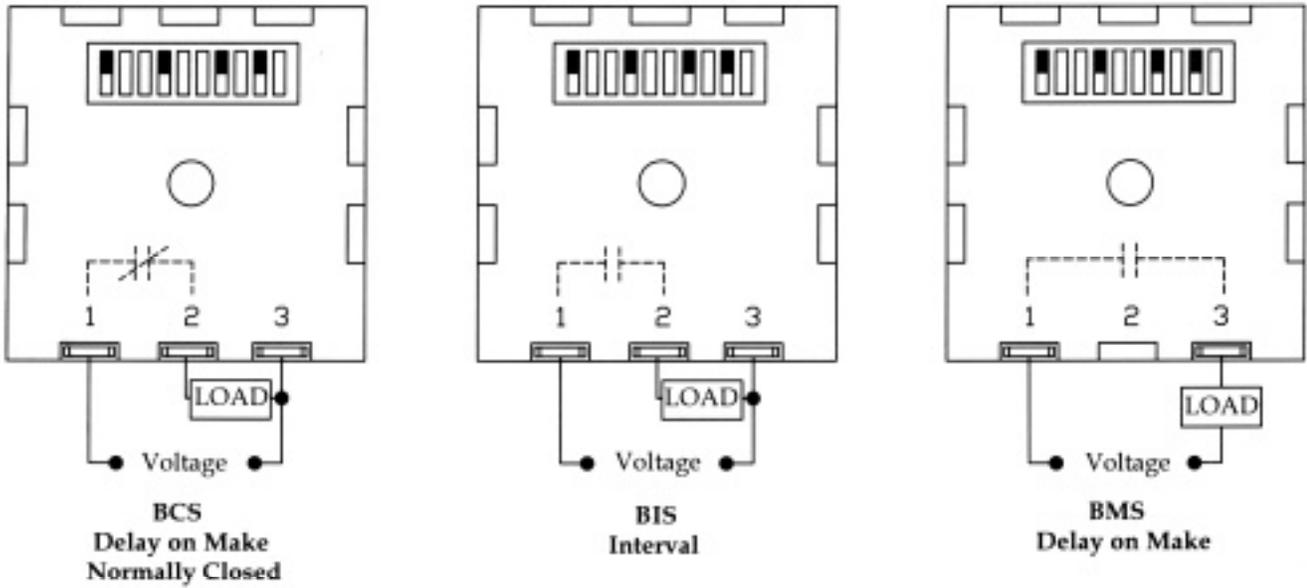
### DELAY ON MAKE, NORMALLY CLOSED - BCS

The output is in a normally closed state. Upon application of power to the input terminals, the output contact transfers and the time delay begins. At the completion of the time delay the output contact drops out. Removal of input power from terminal 3 resets the delay and the output contact reverts to its original closed position.





## CONNECTION DIAGRAMS



ORDERING INFORMATION		
SERIES	INPUT VOLTAGE	DELAY SETTING
BCS	4 - 24 VAC	L - Low Range, .1 to 102.3 Seconds
BIS	5 - 120 VAC	S - Standard Range, 1 to 1023 Seconds
BMS	6 - 230 VAC	H - High Range, 10 to 10230 Seconds

## Q SERIES DIGITAL ENCAPSULATED TIME DELAY MODULES

### FEATURES

- C/MOS Digital Circuitry
- Time Delays To 1000 Minutes
- No First Cycle Effect
- Fully Solid State And Encapsulated
- .5% Repeat Accuracy
- Seven Different Modes Of Operation
- Output Rated at 1 Ampere Continuous,  
10 Amperes Inrush
- Fixed Or Adjustable Time Delays
- Small Size

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: From .05 seconds to 1000 minutes. Fixed delays available.
- 1.3 Repeat accuracy:  $\pm 5\%$  under fixed conditions
- 1.4 Setting accuracy:  $\pm 10\%$
- 1.5 Reset time: 50 milliseconds maximum
- 1.6 Recycle 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: Solid state
- 3.2 Form: SPST
- 3.3 Rating: 1 ampere (20mA minimum)  
- 10 amperes inrush
- 3.4 Life: 100,000,000 operations minimum under full load

#### 4. Protection.

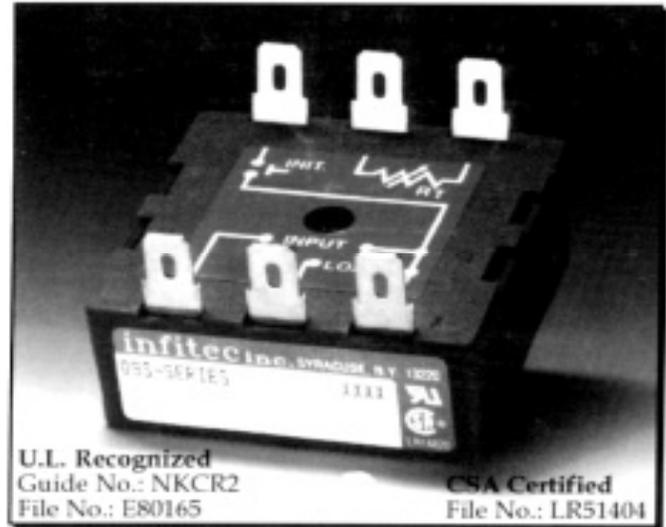
- 4.1 Transient:  $\pm 1500$  volts for 150 microseconds
- 4.2 Polarity: DC units are reverse polarity protected
- 4.3 Dielectric breakdown: 1500 volts RMS minimum

#### 5. Mechanical.

- 5.1 Mounting: One #8 or #10 screw
- 5.2 Termination: 1/4" quick connect terminals
- 5.3 Style: Surface mount encapsulated

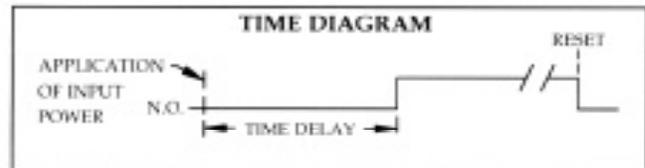
#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- 6.3 Humidity: 95% relative non-condensing



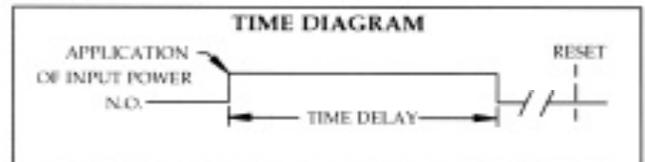
### MODE OF OPERATION - SERIES DELAY ON MAKE - QMS, QMSA

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.



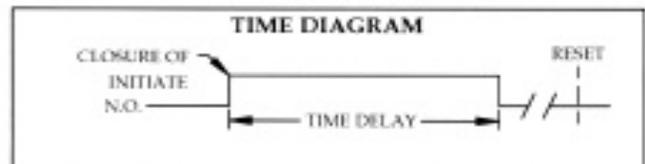
### INTERVAL - QIS

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 - QSS

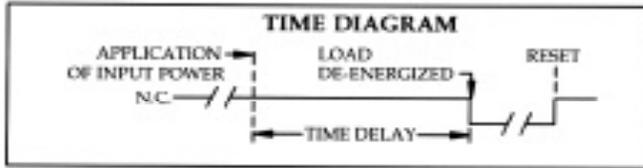
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contact transfers and the time delay begins. At the completion of the pre-selected delay period, the output contact reverts to its original position. Removal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





### DELAY ON MAKE, NORMALLY CLOSED - QCS

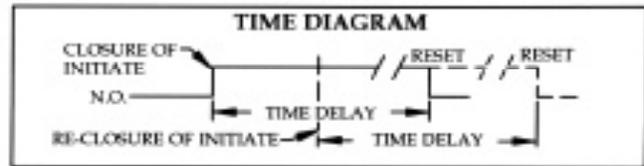
The output is in a normally closed state. Upon application of power to the input terminals, the output contact transfers and the time delay begins. At the completion of the time delay the output contact drops out. Removal of input power from terminal 3 resets the delay and the output contact reverts to its original closed position.



### RETRIGGERABLE ONE-SHOT - QOS

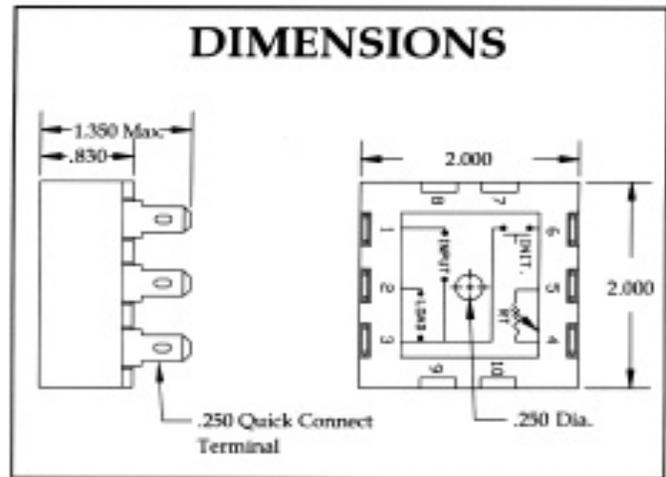
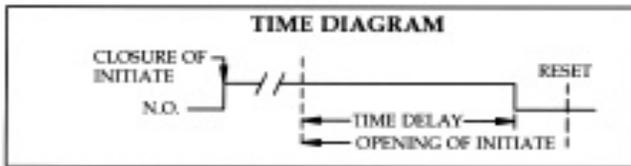
Q SERIES

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.

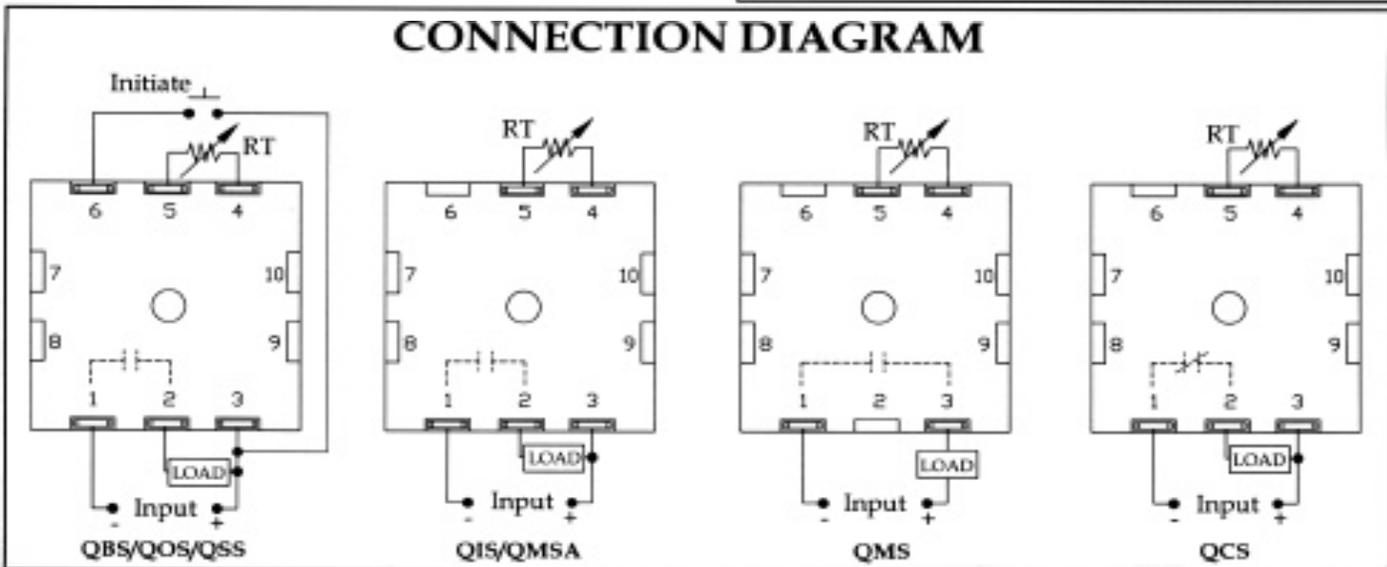


### DELAY ON BREAK - QBS

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. Removal of input power will reset the control.



## CONNECTION DIAGRAM



## ORDERING INFORMATION

SERIES	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY RANGE
QBS	1 - 12 VDC	1 - Fixed	Call For Available Time Delay Ranges
QCS	2 - 24/28 VDC	2 - External	
QIS	4 - 24 VAC	Adjust	
QMS	5 - 120 VAC		
QMSA	6 - 230 VAC		
QOS QSS			

## KKR SERIES MEDIUM/HIGH POWER TIMING CONTROLS

### FEATURES

- C/MOS Digital Circuitry
- Time Delays To 1000 Minutes
- No First Cycle Effect
- .5% Repeat Accuracy
- Wide Voltage Selection 24-230 VAC, 12-28 VDC
- Available In Medium Or High Power Output Ratings
- Outputs Available Isolated Or Non-Isolated
- No Heatsinking Required
- Encapsulated To Withstand Harshesht Environments
- Six Modes Of Operation

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: From .05 seconds to 1000 minutes. Fixed delays available.
- 1.3 Repeat accuracy:  $\pm 5\%$  under fixed conditions
- 1.4 Setting accuracy:  $\pm 10\%$
- 1.5 Reset time: 50 milliseconds maximum
- 1.6 Recycle time: 100 milliseconds
- 1.7 Time delay vs. voltage and temperature:  $\pm 5\%$

#### 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: Medium power - 10 amperes, 1/4 hp @ 125 VAC  
High power - 20 amperes, 1 hp @ 125 VAC  
**Note:** Available with isolated or non-isolated contacts
- 3.4 Life: Medium power =  
Electrical - full load - 1,000,000 operations  
Mechanical - 10,000,000 operations  
High power =  
Electrical - full load - 100,000 operations  
Mechanical - 10,000,000 operations

#### 4. Protection.

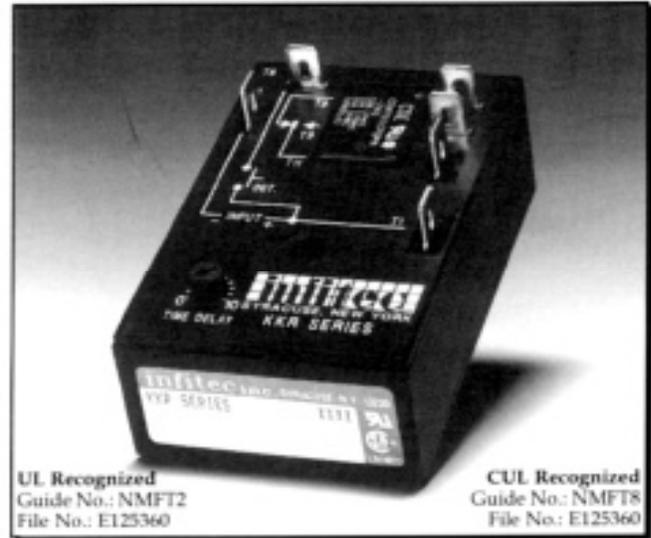
- 4.1 Transient:  $\pm 1500$  volts for 150 microseconds
- 4.2 Polarity: DC units are reverse polarity protected
- 4.3 Dielectric breakdown: 1500 volts RMS minimum

#### 5. Mechanical.

- 5.1 Mounting: .250 dia. hole (#10 screw clearance)
- 5.2 Termination: 1/4" quick connect terminals
- 5.3 Style: Surface mount encapsulated

#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- 6.3 Humidity: 95% relative non-condensing

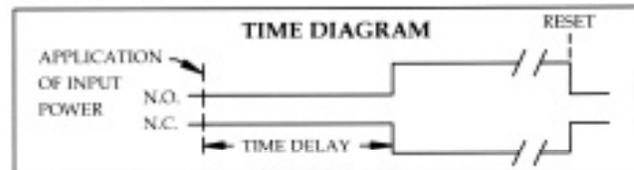


UL Recognized  
Guide No.: NMFT2  
File No.: E125360

CUL Recognized  
Guide No.: NMFT8  
File No.: E125360

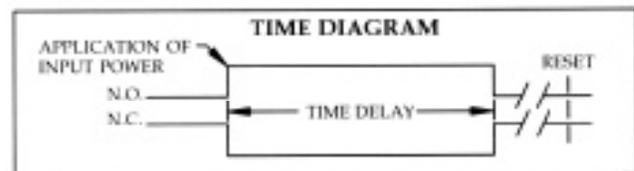
### MODE OF OPERATION - SERIES DELAY ON MAKE - KMKR

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



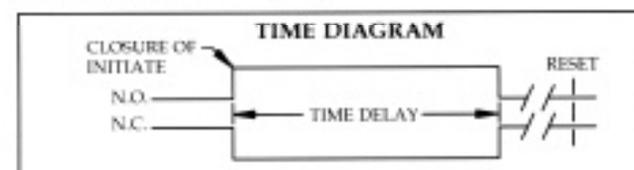
### INTERVAL - KIKR

Upon application of power to the input terminals, the output contacts immediately transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Reset is accomplished by removal of input power.



### SINGLE SHOT - KSKR

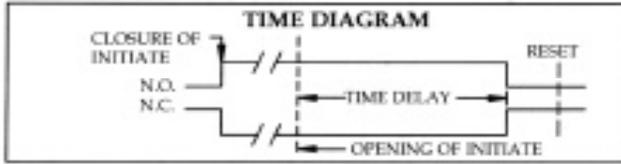
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contacts transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Removal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





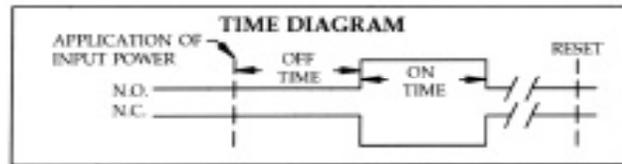
**DELAY ON BREAK - KBKR**

Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, the output contacts transfer and remain transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the end of the pre-selected time delay the output contacts revert to their original unenergized position. Removal of input power will reset the control.



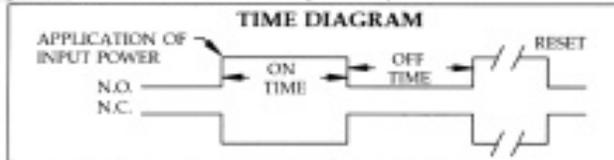
**OFF/ON RECYCLE - KRKR**

Upon application of power to the input terminals, the OFF delay begins. Upon completion of the OFF delay, the output contacts transfer and the ON delay begins. Upon completion of the ON delay, the output contacts revert to their original position and the cycle repeats. Reset is accomplished by removal of input power. **Note: 1st & 2nd delays are equal**



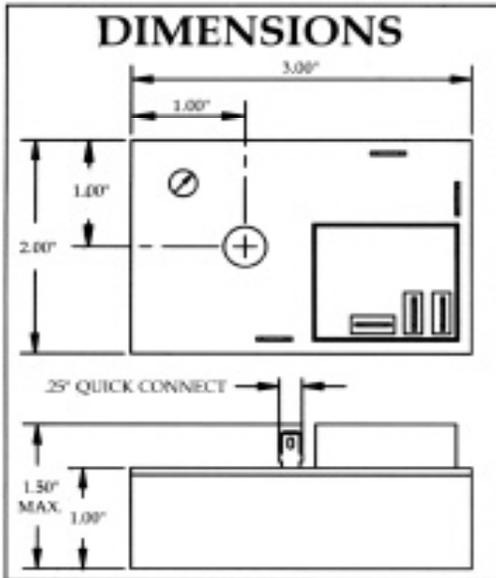
**ON/OFF RECYCLE - KRKR**

Upon application of power to the input terminals, the ON delay begins and the output contacts transfer. Upon completion of the ON delay, the output contacts revert back to their original position and the OFF delay begins. Upon completion of the OFF delay, the output contacts again transfer and the cycle repeats. Reset is accomplished by removal of input power. **Note: 1st & 2nd delays are equal**

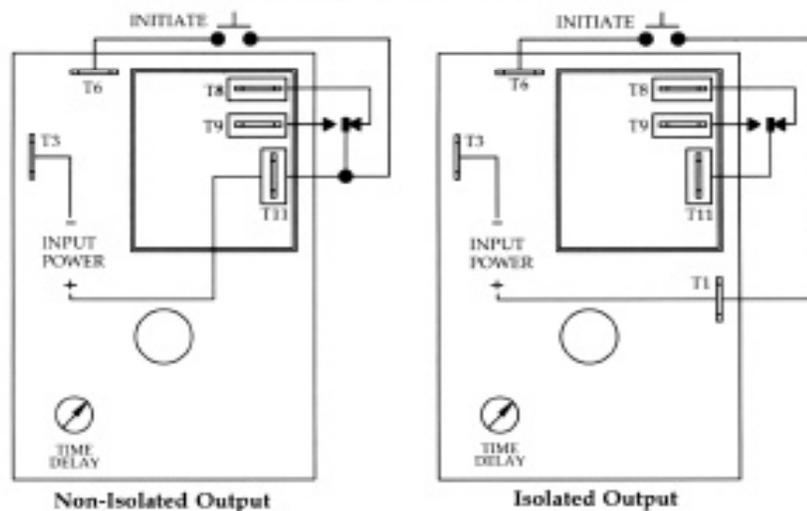


**RETRIGGERABLE ONE-SHOT - KOKR**

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 contacts transfer and the time delay begins. At the completion of the pre-selected time delay the output contacts revert to their original position. **NOTE: Momentary or maintained closure of initiate switch during timing will reset the time delay.**



**CONNECTION DIAGRAM**



**ORDERING INFORMATION**

SERIES	INPUT VOLTAGE	OUTPUT RATING	ADJUSTMENT	TIME DELAY RANGE
KBKR KIKR KMKR KOKR KSKR	1 - 12 VDC 2 - 24/28 VDC 4 - 24 VAC 5 - 120 VAC 6 - 230 VAC	A - Medium Power (10A N.O., 5A N.C.) Isolated B - High Power (20A N.O., 10A N.C.) Isolated E - Medium Power (10A N.O., 5A N.C.) Non-Isolated F - High Power (20A N.O., 10A N.C.) Non-Isolated	0 - Knob 1 - Fixed 2 - Remote Adjustment	Call For Available Time Delay Ranges
KRKR				CYCLE
				TIME DELAY
				1 - On Time First 2 - Off Time First
				Call For Available Time Delay Ranges <b>NOTE: 1st &amp; 2nd delays are equal</b>

## S SERIES DIGITAL OPEN BOARD TIME DELAY RELAYS

### FEATURES

- C/MOS Digital Circuitry
- Time Delays To 1000 Minutes
- No First Cycle Effect
- .5% Repeat Accuracy
- DPDT 10 Ampere Output Rating
- 1/4" Or 3/16" Quick Connect Termination
- Low Cost Open Board Construction
- Fully Solid State Timing
- Surface Mounting
- Five Modes Of Operation
- Available With On Board Timing Adjustment
- CUL Pending

### SPECIFICATIONS

#### 1. Time Delay.

- 1.1 Type: C/MOS digital circuitry
- 1.2 Range: From .05 seconds to 1000 minutes. Fixed delays available.
- 1.3 Repeat accuracy:  $\pm 5\%$  under fixed conditions
- 1.4 Setting accuracy:  $\pm 10\%$
- 1.5 Reset time: 100 milliseconds maximum
- 1.6 Recycle 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 & 110 VDC
- 2.2 Tolerance:  $\pm 20\%$  of nominal
- 2.3 Frequency: 50 - 60 Hertz

#### 3. Output.

- 3.1 Type: Electromechanical relay
- 3.2 Form: DPDT
- 3.3 Rating: 10 amperes resistive @ 120 VAC
- 3.4 Life: Electrical - full load - 1,000,000 operations  
Mechanical - 10,000,000 operations

#### 4. Protection.

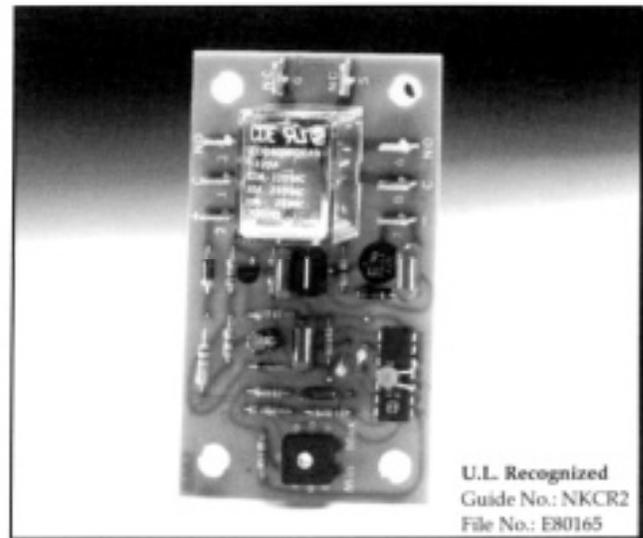
- 4.1 Transient:  $\pm 1500$  volts for 150 microseconds
- 4.2 Polarity: D.C. units are reverse polarity protected
- 4.3 Dielectric breakdown: 1500 volts RMS minimum

#### 5. Mechanical.

- 5.1 Mounting: #6 screw clearance (4 places)
- 5.2 Termination: 1/4" or 3/16" quick connect
- 5.3 Style: Open board/surface mount

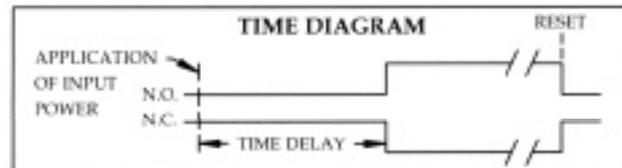
#### 6. Environmental.

- 6.1 Operating temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- 6.2 Storage temperature:  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$



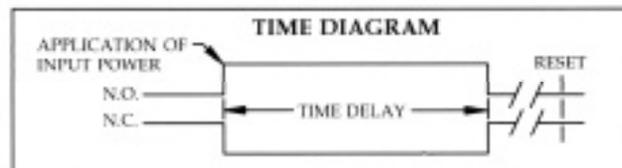
### MODE OF OPERATION - SERIES DELAY ON MAKE - SMR

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



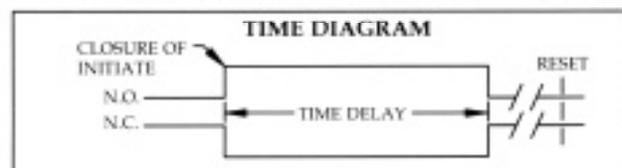
### INTERVAL - SIR

Upon application of power to the input terminals, the output contacts immediately transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Reset is accomplished by removal of input power.



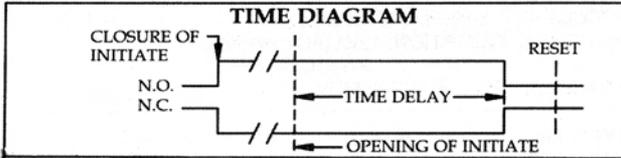
### SINGLE SHOT - SSR

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 contacts transfer and the time delay begins. At the completion of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.



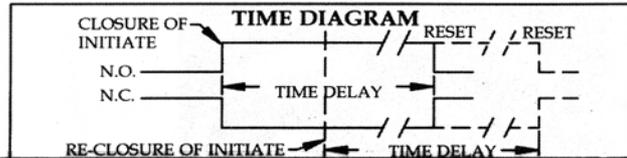
## DELAY ON BREAK - SBR

Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, the output contacts transfer and remain transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the end of the pre-selected delay period, the output contacts revert to their original position. Removal of input power will reset the control.

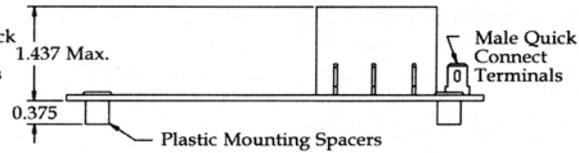
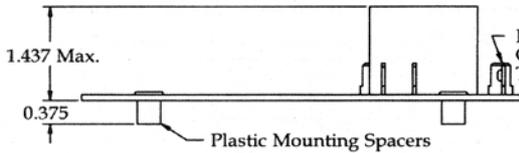
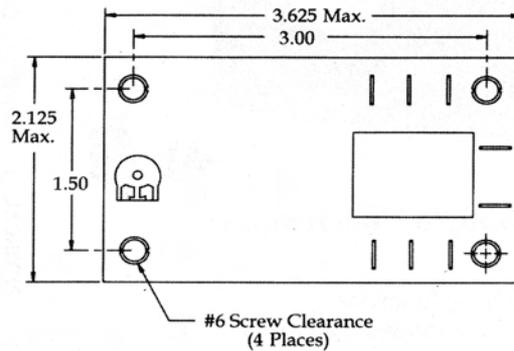
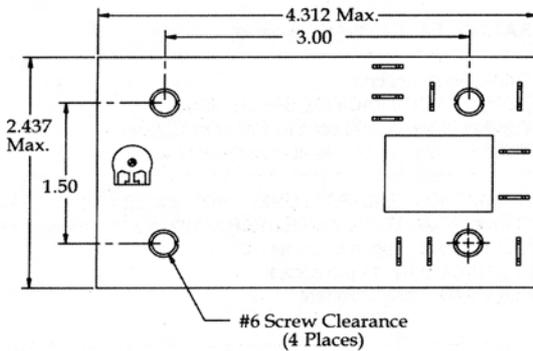


## RETRIGGERABLE ONE-SHOT - SOR

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 contacts transfer and the time delay begins. At the completion of the pre-selected time delay the output contacts revert to their original position. **NOTE:** Momentary or maintained closure of initiate switch during timing will reset the time delay.



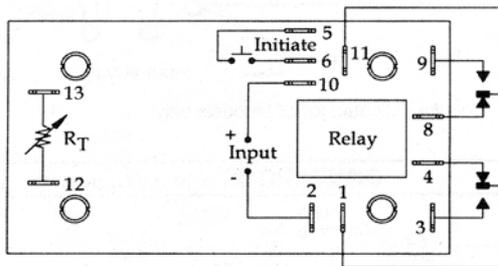
## DIMENSIONS



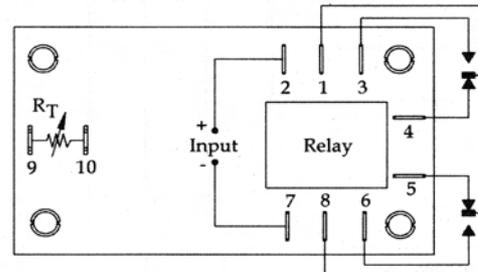
SBR, SSR, SOR

SIR, SMR

## CONNECTION DIAGRAM



SBR, SSR, SOR



SIR, SMR

## ORDERING INFORMATION

SERIES	TERMINATION	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY RANGE
SBR SIR SMR SOR SSR	2 - 3/16" Quick Connect 3 - 1/4" Quick Connect	1 - 12 VDC 2 - 24/28 VDC 3 - 110 VDC 4 - 24 VAC 5 - 120 VAC 6 - 230 VAC	0 - Knob 1 - Fixed 2 - Remote Adjustment	Call For Available Time Delay Ranges