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KKR SERIES MEDIUM/HIGH POWER TIMING CONTROLS

FEATURES

- C/MOS Digital Circuitry
- Time Delays To 1000 Minutes
- No First Cycle Effect
- 0.5% Repeat Accuracy
- Wide Voltage Selection 24-230 VAC, 12-28 VDC
- Medium, High Power, or Heavy Duty Output Ratings
- Outputs Available Isolated or Non-Isolated
- No Heatsinking Required
- Encapsulated to Withstand Harsh Environment
- Seven Modes of Operation
- UL/cUL Recognized

SPECIFICATIONS

1. Time Delay

- 1.1 Type: C/MOS Digital 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 Recycle Time: 100 Milliseconds
- 1.7 Time Delay vs. Voltage and Temperature: $\pm 5\%$
- 1.8 External Resistance (Remote Adjust Only):
1 Megohm = Maximum Delay

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: SPST, SPDT, or DPDT (See Ordering Information)
- 3.3 Rating: See Output Rating Chart
- NOTE: Available with Isolated or Non-Isolated Contacts
- 3.4 Life: Medium Power:

Electrical - Full Load - 100,000 Operations
 Mechanical - 10,000,000 Operations
 High Power & Heavy Duty:
 Electrical - Full Load - 100,000 Operations
 Mechanical - 10,000,000 Operations

4. Protection

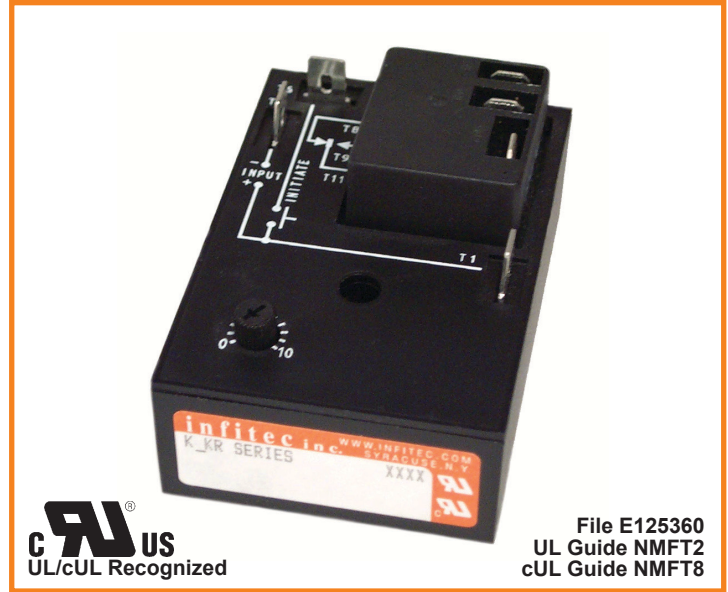
- 4.1 Transient: ± 1500 Volts for 150 Microseconds
- 4.2 Polarity: DC Units Are Reverse Polarity Protected
- 4.3 Dielectric Breakdown: 1500 Volts RMS Minimum

5. Mechanical

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

OUTPUT CONTACT RATING CHART

	30 VDC	125 VAC	240 VAC
MEDIUM POWER			
N.O.	10A	10A, 1/4hp	10A, 1/4hp
N.C.	5A	5A, 1/4hp	5A, 1/4hp
HIGH POWER			
N.O.	20A	20A, 1hp	20A, 2hp
N.C.	10A	10A, 1/4hp	10A, 1/2hp
HEAVY DUTY			
N.O.	30A	30A, 1hp	30A, 2hp



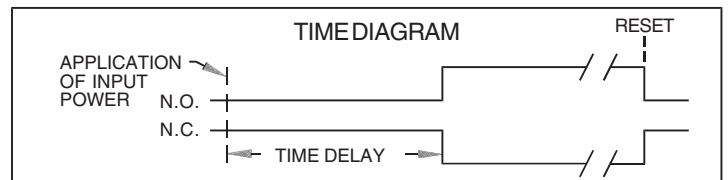
6. Environmental

- 6.1 Operating Temperature: -20°C to $+80^{\circ}\text{C}$
- 6.2 Storage Temperature: -30°C to $+85^{\circ}\text{C}$
- 6.3 Humidity: 95% Relative Non-Condensing

MODE OF OPERATION DELAY ON MAKE

SERIES KMKR

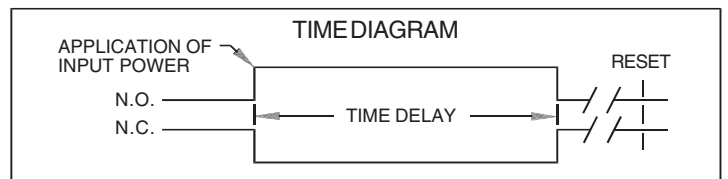
Upon application of power to the input terminals, the time delay begins. At the completion of the pre-selected time delay, the output contacts transfer. Reset is accomplished by removal of input power. There is no false output when reset during timing.



INTERVAL

KIKR

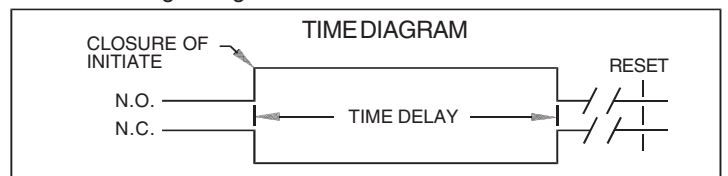
Upon application of power to the input terminals, the output contacts immediately transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Reset is accomplished by removal of input power.



SINGLE SHOT

KSKR

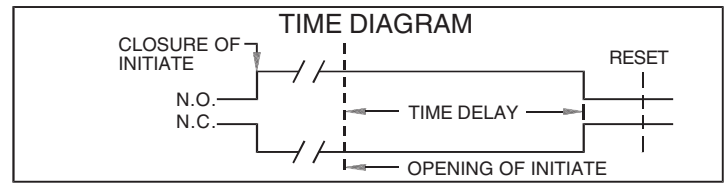
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contacts transfer and the time delay begins. At the completion of the pre-selected time delay, the output contacts revert to their original position. Removal of input power will reset the control. Closure of initiate during timing will have no effect.



DELAY ON BREAK

KBKR

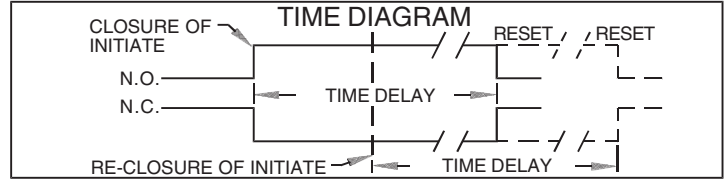
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, the output contacts transfer and remain transferred if no further action is taken. When the initiate switch is opened, the time delay begins. At the end of the pre-selected time delay the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



RETRIGGERABLE ONE SHOT

KOKR

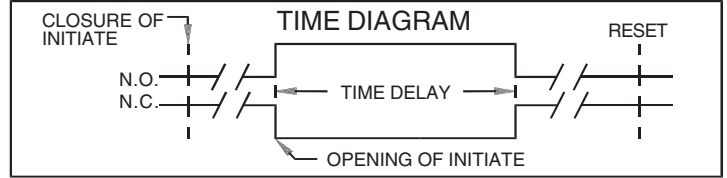
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch (momentary or maintained) the output contacts transfer and the time delay begins. At the completion of the pre-selected time delay the output contacts revert to their original position. **NOTE:**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



TRAILING EDGE TRIGGERED

KTKR

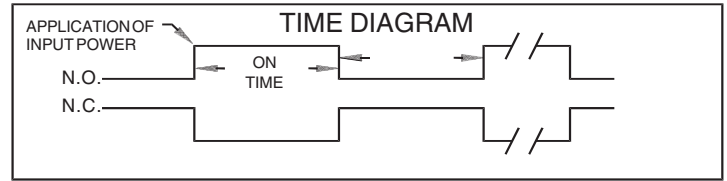
Power must be applied to the input at all times prior to and during timing. Upon closure of the initiate switch, nothing happens. When the initiate switch is opened, the time delay begins and the output contact transfers. At the completion of the pre-selected delay period the contact reverts to its original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



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

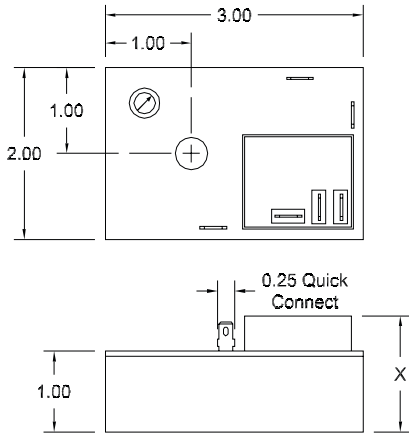


OFF/ON RECYCLE

KRKR

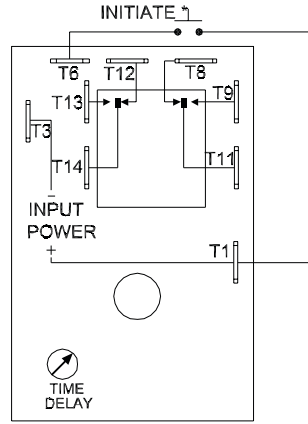
Opposite of ON/OFF Recycle **Note:** 1st & 2nd delays are equal

DIMENSIONS

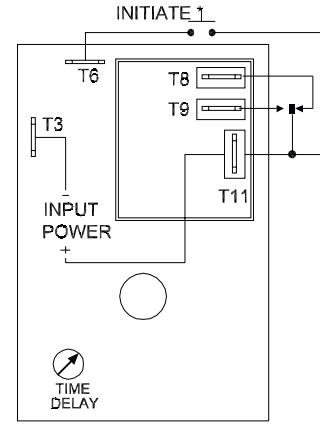


X = 1.75 MAX. FOR OUTPUT RATING "T"
X = 1.5 MAX. FOR OUTPUT RATING "A,B,E,F"

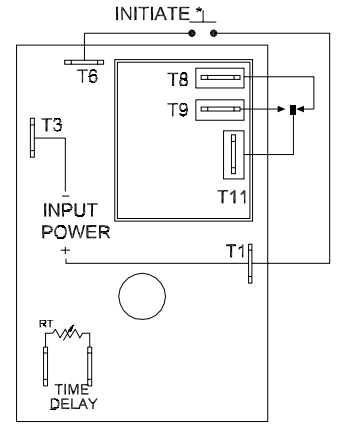
CONNECTION DIAGRAMS



OUTPUT RATING "T"
(LOCAL ADJ. SHOWN)



OUTPUT RATING "E" & "F"
(LOCAL ADJ. SHOWN)



OUTPUT RATING "A" & "B"
(EXTERNAL ADJ. SHOWN)

*INITIATE SWITCH FOR MODELS KBKR, KOKR, KSKR & KTKR ONLY.

ORDERING INFORMATION

SERIES	INPUT VOLTAGE	OUTPUT RATING	ADJUSTMENT	TIME DELAY RANGE
KBKR	1 - 12 VDC	A - Medium Power, SPDT Isolated	0 - Local	See Time Delay Range Chart
KIKR	2 - 24/28 VDC	B - High Power, SPDT Isolated	1 - Fixed	
KMKR	4 - 24 VAC	C - Heavy Duty, SPST Isolated	2 - Remote Adjustment	KRKR ONLY TIME DELAY 1 - On Time First 2 - Off Time First
KOKR	5 - 120 VAC	E - Medium Power, SPDT Non-Isolated		
KSKR	6 - 230 VAC	F - High Power, SPDT Non-Isolated		Note: 1st & 2nd delays are equal.
KTKR		G - Heavy Duty, SPST Non-Isolated		
KRKR		T - Medium Power, DPDT Isolated		