



INSTALLATION INSTRUCTIONS

TIME RANGER™ PROGRAMMABLE
MULTI-FUNCTION MULTI-RANGE
PLUG-IN TIME DELAY RELAY



**READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE.
KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

WARNING

Potentially hazardous voltages are present. Turn off all power supplying this equipment before connecting or disconnecting wiring.

INSTALLATION

Mount the appropriate 8 pin (Macromatic Product Number 70169-D) or 11 pin (Product Number 70170-D) octal socket in a suitable enclosure. Wire the socket per diagrams below. Set the time delay as described per chart on the right and set the function as described below. Plug unit into socket.

SELECTING AN INPUT VOLTAGE

This unit works on either 120VAC or 24VAC/DC. Select Wiring Diagram 43 or 44 from below for proper connections. For DC input voltages make sure the polarity matches the appropriate diagram.

WIRING

A wiring diagram is also provided on the side of the time delay relay.

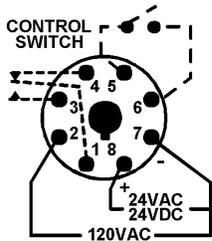


DIAGRAM 43

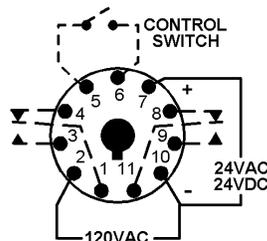


DIAGRAM 44

NOTE: For functions using a trigger signal, the Control Switch is a dry-type contact (applying voltage to Pins 5 & 6 could damage the unit). Do not use solid state input devices as the Control Switch because problems with leakage current may occur.

SELECTING A FUNCTION

The unit comes with 8 field selectable functions. Determine the desired function using the chart on the top of the unit or see the descriptions on page two (2) of these instructions for the available functions and timing charts. Position the rotary switch to the number that matches the desired function. **DO NOT CHANGE THE FUNCTION WITH THE POWER APPLIED TO THE UNIT.**

TROUBLESHOOTING

If the unit fails to operate properly, check that all connections are correct per the appropriate diagram from above. For DC Input Voltages, make sure the polarity matches the appropriate wiring diagram from above. Use the descriptions of how each function operates on back of this sheet as a guide to determine if the unit is operating properly. If problems continue, contact Macromatic at 800-238-7474 for assistance.

TIMING RANGE CHART

Dial Setting	Timing Range
A	0.2 - 1.7 Sec
B	1.5 - 8 Sec
C	3 - 15 Sec
D	4 - 22 Sec
E	5 - 30 Sec
F	7 - 35 Sec
G	8 - 44 Sec
H	10 - 50 Sec
I	35 Sec - 4 Min
J	3 - 20 Min
K	5 - 35 Min
L	10 - 55 Min
M	15 - 70 Min
N	30 - 90 Min
O	40 - 100 Min
P	50 - 120 Min

SETTING THE TIME DELAY

This unit comes with 16 built-in time ranges in one unit. First, determine the desired time range from the Timing Range Chart located on the wide side of the unit or from the table on the left. Position the rotary switch to the letter that matches the desired time range. **DO NOT CHANGE THE SETTING OF THIS SWITCH WITH POWER APPLIED TO THE UNIT.** Finally, adjust the time delay within the programmed time range by adjusting the knob located on the top of the unit. NOTE: the tick marks are for reference only.

SPECIFICATIONS

Input Voltage:

See Product Nameplate for actual voltage. AC tolerances are +10/-15% @ 50/60Hz. DC tolerances are +10/-15%

Output Contact Rating:

10A Resistive @ 240VAC/28VDC
1/2 HP @ 240VAC

Temperature Range:

-28° to 65°C (-20° to 150° F)

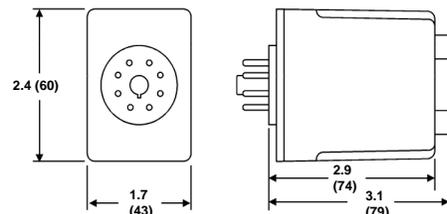
Trigger Switch Reset Time:

0.1 seconds minimum. Must be closed for 0.05% of time range selected

Setting Accuracy:

MAX +10%, -0%
MIN +0%, -50%

DIMENSIONS



Dimensions shown are inches (millimeters)

WARRANTY

All products manufactured by Macromatic are warranted to be free from defects in workmanship or material under normal service and use for a period of two (2) years from the date of manufacture.

INSTALLATION INSTRUCTIONS

TIME RANGER™ MULTI-FUNCTION MULTI-RANGE TIME DELAY RELAY

DIAL SETTING	FUNCTION	OPERATION	TIMING CHART
1	ON/OFF DELAY	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the trigger signal, the preset time begins. At the end of the preset time, the relay contacts will transfer. Upon opening of the trigger signal, the preset time begins. At the end of the preset time, the output contacts return to their normal condition.	
2	TRIGGERED ON DELAY	Upon application of the input voltage, the time delay relay is ready to accept trigger signals. Upon application of the trigger signal, a preset time begins (trigger must remain closed throughout the preset time). At the end of the preset time, the relay energizes and remains energized until trigger signal is opened.	
3	OFF DELAY	Upon application of input voltage, the time delay relay is ready to accept trigger signals. Upon application of the trigger signal, the relay contacts transfer and hold. Upon release of the trigger signal, the preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Any application of the trigger signal will reset the time.	
4	RETRIGGERABLE SINGLE SHOT	Upon application of input voltage, the time delay relay is ready to accept trigger signals. Upon application of the trigger signal, the relay contacts transfer and the preset time begins. At the end of the preset time, the relay contacts return to their normal condition unless the trigger signal is opened and closed prior to time out (before preset time elapses). Continuous cycling of the trigger signal at a rate faster than the preset time will cause the relay contacts to remain closed.	
5	ON DELAY	Upon application of input voltage, the preset time begins. At the end of the preset time, the relay contacts transfer. Input voltage must be removed and reapplied to reset the time delay relay.	
6	ON DELAY	Same function as Position 5	
7	INSTANTANEOUS ON	Upon applications of input voltage, the relay contacts transfer. Power must be removed and reapplied to reset the relay	
8	INTERVAL ON	Upon application of input voltage, the relay contacts transfer and the preset time begins. At the end of the preset time, the contacts return to their normal condition. Input voltage must be removed and reapplied to reset the time delay relay.	