NON-PROGRAMMABLE | ON DELAY, INTERVAL, TRUE OFF DELAY & FLASHER

TR-5 Series

- Onboard & remote adjustable or fixed time delays from 0.05 seconds to 2 hours
- Uses industry-standard 8 pin octal sockets
- 10A DPDT output contacts

with appropriate socket

FUNCTION ■	INPUT VOLTAGE 50/60Hz.	PRODUCT NUMBER **	WIRING/ SOCKETS ▲
ON DELAY **A**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-50222-** TR-50226-** TR-50228-** TR-50221-**	8 PIN OCTAL **70169-D**
INTERVAL ON **B**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-50522-** TR-50526-** TR-50528-** TR-50521-**	
TRUE OFF DELAY **R**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-50622-** TR-50626-** TR-50628-** TR-50621-**	
FLASHER (OFF 1st) **E**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-50822-** TR-50826-** TR-50828-** TR-50821-**	

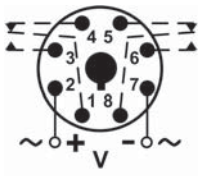

DIAGRAM 1

■ See “Definitions of Timing Functions”.

** Complete Product Number using two-digit Code from Table below.

▲ Note: If these products are ordered with the Remote Adjustable Time Delay modification (suffix -Rx), they will require an 11 pin octal socket–see ***www.macromatic.com/remote*** for information. Remote Adjustable Time Delay not available on TR-506 products.

Time Delays

TR-5 Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., TR-50222-05 is an On Delay with a time delay range of 0.1-10 seconds.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix “F” followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., TR-50222-F5S is an On Delay with a time delay fixed at 5 seconds.
- **Remote Adjustable Time Delay**--Selected TR-5 Series products can be built with two terminals for remote adjustable or fixed time delays. See ***www.macromatic.com/remote*** for information.

** TIMING RANGE TABLE	
Time Delay Range	**Code**
0.05 - 5 Sec.	04
0.1 - 10 Sec.	05
0.3 - 30 Sec.	07
0.6 - 60 Sec.	08
1.2 - 120 Sec.	09
1.8 - 180 Sec.	10
3 - 300 Sec.	12
0.1 - 10 Min.	22
0.3 - 30 Min.	15
0.6 - 60 Min.	16✠
1.2 - 120 Min.	17✠

✠ Not offered on TR-506

Sockets & Accessories available

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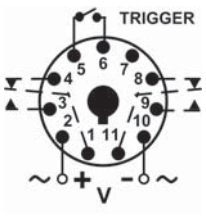
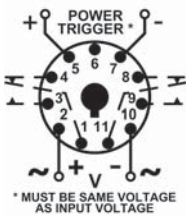
NON-PROGRAMMABLE | OFF DELAY, SINGLE SHOT, WATCHDOG & SINGLE SHOT FALLING EDGE

TR-5 Series

FUNCTION ■ ▲	INPUT VOLTAGE 50/60Hz.	PRODUCT NUMBER **	WIRING/ SOCKETS ▲
OFF DELAY Control Switch Trigger **C**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51622-** TR-51626-** TR-51628-** TR-51621-**	11 PIN OCTAL **70170-D**  **DIAGRAM 2**
SINGLE SHOT Control Switch Trigger **D**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51522-** TR-51526-** TR-51528-** TR-51521-**	
WATCHDOG Control Switch Trigger (Retriggerable Single Shot) **J**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51322-** TR-51326-** TR-51328-** TR-51321-**	
SINGLE SHOT FALLING EDGE Control Switch Trigger **H**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-52222-** TR-52226-** TR-52228-** TR-52221-**	
OFF DELAY Power Trigger **C**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51922-** TR-51926-** TR-51928-** TR-51921-**	11 PIN OCTAL **70170-D**  **DIAGRAM 4**
SINGLE SHOT Power Trigger **D**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51722-** TR-51726-** TR-51728-** TR-51721-**	
WATCHDOG Power Trigger (Retriggerable Single Shot) **J**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51822-** TR-51826-** TR-51828-** TR-51821-**	

■ See “Definitions of Timing Functions”.

** Complete Product Number using two-digit Code from Table below.

▲ 8 Pin SPDT versions of these functions (except Single Shot Falling Edge) are available.

Time Delays

TR-5 Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., TR-51622-05 is an Off Delay with a time delay range of 0.1-10 seconds.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix “F” followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., TR-51622-F5S is an Off Delay with a time delay fixed at 5 seconds.
- **Remote Time Delay**--Selected TR-5 Series products can be built with two terminals for remote adjustable or fixed time delays. See *www.macromatic.com/remote* for information.

** TIMING RANGE TABLE	
Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	05
0.3 - 30 Sec.	07
0.6 - 60 Sec.	08
1.2 - 120 Sec.	09
1.8 - 180 Sec.	10
3 - 300 Sec.	12
0.1 - 10 Min.	22
0.3 - 30 Min.	15
0.6 - 60 Min.	16
1.2 - 120 Min.	17

Sockets & Accessories available

Build your Time Delay Relays with the *Online Product Builder*

- Onboard & remote adjustable or fixed time delays from 0.05 seconds to 2 hours
- Uses industry-standard 11 pin octal sockets
- 10A DPDT output contacts

with appropriate socket

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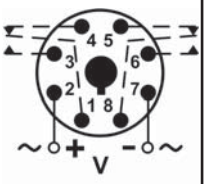
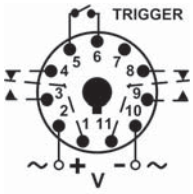
NON-PROGRAMMABLE | REPEAT CYCLE, ON/OFF DELAY, & DELAYED INTERVAL

TR-5 Series

- Onboard & remote adjustable or fixed time delays from 0.05 seconds to 2 hours
- Independently adjustable ON & OFF times
- Uses industry-standard 8 or 11 pin octal sockets
- 10A DPDT output contacts

with appropriate socket

FUNCTION ■	INPUT VOLTAGE 50/60Hz.	PRODUCT NUMBER **	WIRING/ SOCKET
REPEAT CYCLE* (OFF Time First Followed By ON Time and Repeating) **L**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-53122-** TR-53126-** TR-53128-** TR-53121-**	8 PIN OCTAL **70169-D**  **DIAGRAM 1**
ON/TRUE OFF DELAY **T**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-54622-** TR-54626-** TR-54628-** TR-54621-**	
REPEAT CYCLE* (ON Time First Followed By OFF Time and Repeating) **M**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-55122-** TR-55126-** TR-55128-** TR-55121-**	
DELAYED INTERVAL* (OFF Time Followed by ON Time Followed by OFF State Until Reset) **N**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-56122-** TR-56126-** TR-56128-** TR-56121-**	11 PIN OCTAL **70170-D**  **DIAGRAM 2**
ON/OFF DELAY* Control Switch Trigger **G**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-54122-** TR-54126-** TR-54128-** TR-54121-**	
DELAYED INTERVAL* Control Switch Trigger (OFF Time Followed by ON Time Followed by OFF State Until Reset) **P**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-56522-** TR-56526-** TR-56528-** TR-56521-**	

■ See “Definitions of Timing Functions”.

* ON & OFF Time Ranges for these functions are the same. See *www.macromatic.com/onoff* for information on how to order a unit with different ON & OFF time ranges.

** Complete Product Number using two-digit Code from Table below.

Time Delays

TR-5 Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., TR-53122-05 is a Repeat Cycle with both an ON & OFF time delay range of 0.1-10 seconds. See *www.macromatic.com/onoff* for information on how to order a unit with different ON & OFF time ranges.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix “F” followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., TR-53122-F5S is a Repeat Cycle with a time delay fixed at 5 seconds.
- **Remote Time Delay**--Selected TR-5 Series products can be built with two terminals for remote adjustable or fixed time delays. See *www.macromatic.com/remote* for information.

** TIMING RANGE TABLE	
Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	05
0.3 - 30 Sec.	07
0.6 - 60 Sec.	08
1.2 - 120 Sec.	09
1.8 - 180 Sec.	10
3 - 300 Sec.	12
0.1 - 10 Min.	22
0.3 - 30 Min.	15
0.6 - 60 Min.	16✠
1.2 - 120 Min.	17✠

✠ Not offered on TR-506

Sockets & Accessories available

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TR-5 SERIES
Non-Programmable

Application Data

Voltage Tolerance:

AC Operation: +10/-15% of nominal at 50/60 Hz.
DC Operation: +10/-15% of nominal.

Load (Burden):

Maximum of 2 VA for all voltages

Setting Accuracy:

Maximum Setting (Adjustable): +5%, -0%
Minimum Setting (Adjustable): +0%, -50%
Fixed Time Delay: ±2%

Repeat Accuracy (constant voltage and temperature)**:**

±0.1% or ± 0.04 seconds, whichever is greater

Reset Time:

Input Voltage (All Functions)	0.100 Seconds
Triggered Functions only	0.04 Seconds

Start-up Time:

(Time from when power is applied until unit is timing)
0.05 Seconds

Maintain Function Time:

(Time unit continues to operate after power is removed)
0.01 Seconds for all units

Temperature: Operating: -28° to 65°C (-18° to 149°F)
Storage: -40° to 85°C (-40° to 185°F)

Output Contacts:

(All TR-5 Series Products except TR-506 & TR-546)
DPDT 10A @ 240V AC/30V DC,
1/2HP @ 120/240V AC (N.O.), 1/3HP @ 120/240V AC (N.C.)
B300 & R300; AC15 & DC13

(TR-506 & TR-546)
DPDT 10A @ 240V AC; 8A @ 28V DC,
1/2 HP @ 240V AC, 1/4HP @ 120V AC
B300 & R300

Life:

Mechanical: 10,000,000 operations (2,000,000 operations on TR-506 & TR-546 Series only)
Full Load: 100,000 operations

Compatibility:

Using a solid state switch to initiate the time sequence is acceptable. See ***www.macromatic.com/leakage*** or contact Macromatic for information regarding leakage current limits and other solid state design considerations.

Triggering Off Delay, Single Shot or Watchdog Units:

Timing sequence must be initiated only after input voltage is applied to unit. Minimum required trigger switch closure time is 0.05 seconds.

IMPORTANT FOR TR-506 & TR-546 SERIES ONLY: These relays are shipped from the factory in the OFF state. A shock to the relay during shipping or installation may cause it to change to the ON state. It is recommended that input voltage be applied to the product for at least 0.1 second and removed to cycle the unit to the OFF state prior to use in the application. Please note that it will take as long as the OFF Delay setting to reset the unit once input voltage has been removed.

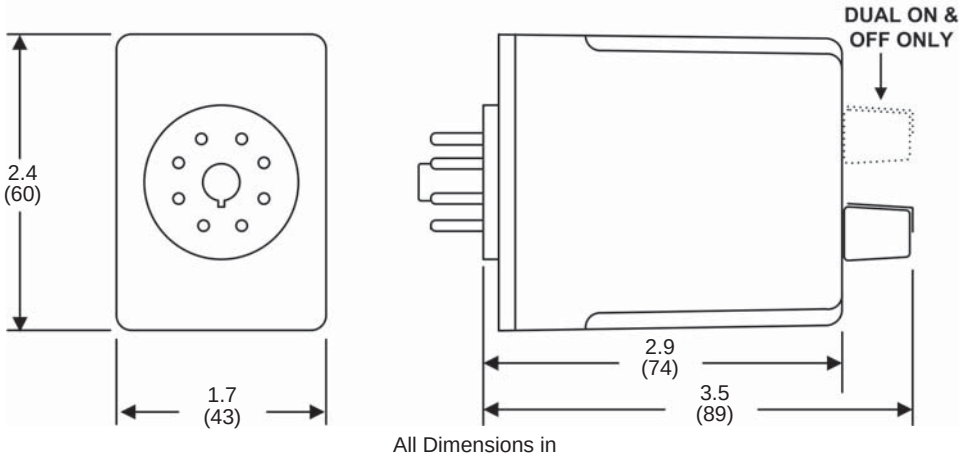
Approvals:

(All TR-5 Series Products except TR-506 & TR-546) File #E109466, File #LR45565

(TR-506 & TR-546 only) File #E109466

(All TR-5 Series Products) Low Voltage & EMC Directives EN60947-1, EN60947-5-1; UL LISTED IND. CONT. EQUIP. 50U7 with appropriate socket File #E109466

Dimensions



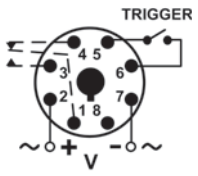
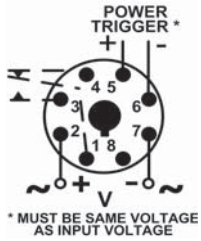
All Dimensions in Inches (Millimeters)

NON-PROGRAMMABLE | OFF DELAY, SINGLE SHOT & WATCHDOG

8 PIN | SPDT VERSIONS | TR-5 SERIES

- These are 8 pin 10A SPDT versions of our standard 11 pin DPDT products
- Onboard & remote adjustable or fixed time delays from 0.05 seconds to 2 hours
- Uses industry-standard 8 pin octal socket

with appropriate socket

FUNCTION ■	INPUT VOLTAGE 50/60Hz.	PRODUCT NUMBER **	WIRING/ SOCKETS ▲
OFF DELAY Control Switch Trigger **C**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51662-** TR-51666-** TR-51668-** TR-51661-**	8 PIN OCTAL **70169-D** ▲  **DIAGRAM 11**
SINGLE SHOT Control Switch Trigger **D**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51562-** TR-51566-** TR-51568-** TR-51561-**	
WATCHDOG Control Switch Trigger (Retriggerable Single Shot) **J**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51362-** TR-51366-** TR-51368-** TR-51361-**	
OFF DELAY Power Trigger **C**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51962-** TR-51966-** TR-51968-** TR-51961-**	8 PIN OCTAL **70169-D** ▲  **DIAGRAM 37**
SINGLE SHOT PowerTrigger **D**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51762-** TR-51766-** TR-51768-** TR-51761-**	
WATCHDOG Power Trigger (Retriggerable Single Shot) **J**	120V AC/DC 12V DC 24V AC/DC 240V AC	TR-51862-** TR-51866-** TR-51868-** TR-51861-**	

■ See “Definitions of Timing Functions”.

** Complete Product Number using two-digit Code from Table below.

▲ Note: if these products are ordered with the Remote Adjust Potentiometer modification (suffix -Rx), they will require an 11 pin octal socket—see *www.macromatic.com/remote* for information.

TIME DELAYS

TR-5 Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., TR-51662-05 is an Off Delay with a time delay range of 0.1-10 seconds.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix “F” followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., TR-51662-F5S is an Off Delay with a time delay fixed at 5 seconds.
- **Remote Time Delay**--Selected TR-5 Series products can be built with two terminals for remote adjustable or fixed time delays. See *www.macromatic.com/remote* for information.

** TIMING RANGE TABLE	
Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	05
0.3 - 30 Sec.	07
0.6 - 60 Sec.	08
1.2 - 120 Sec.	09
1.8 - 180 Sec.	10
3 - 300 Sec.	12
0.1 - 10 Min.	22
0.3 - 30 Min.	15
0.6 - 60 Min.	16
1.2 - 120 Min.	17

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TR-5 SERIES
8 Pin | SPDT Versions

Application Data

Voltage Tolerance:

AC Operation: +10/-15% of nominal at 50/60 Hz.
DC Operation: +10/-15% of nominal.

Load (Burden):

Maximum of 2 VA for all voltages

Setting Accuracy:

Maximum Setting (Adjustable): +5%, -0%
Minimum Setting (Adjustable): +0%, -50%
Fixed Time Delay: ±2%

Repeat Accuracy (constant voltage and temperature)**:**

±0.1% or ± 0.04 seconds, whichever is greater

Reset Time:

Input Voltage (All Functions)	0.100 Seconds
Triggered Functions only	0.04 Seconds

Start-up Time:

(Time from when power is applied until unit is timing)
0.05 Seconds

Maintain Function Time:

(Time unit continues to operate after power is removed)
0.01 Seconds for all units

Temperature: Operating: -28° to 65°C (-18° to 149°F)
Storage: -40° to 85°C (-40° to 185°F)

Output Contacts:

SPDT 10A @ 240V AC/30V DC,
1/2HP @ 120/240V AC (N.O.), 1/3HP @ 120/240V AC (N.C.)
B300 & R300; AC15 & DC13

Life:

Mechanical: 10,000,000 operations
Full Load: 100,000 operations

Compatibility:

Using a solid state switch to initiate the time sequence is acceptable. See ***www.macromatic.com/leakage*** or contact Macromatic for information regarding leakage current limits and other solid state design considerations.

Triggering Off Delay, Single Shot or Watchdog Units:

Timing sequence must be initiated only after input voltage is applied to unit. Minimum required trigger switch closure time is 0.05 seconds.

Approvals:

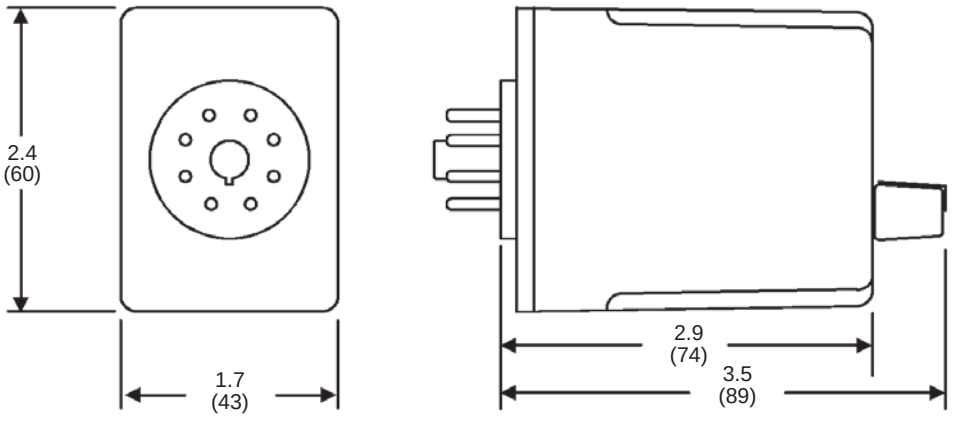
c US File #E109466

SA File #LR45565

CE Low Voltage & EMC Directives EN60947-1, EN60947-5-1

c UL us with appropriate socket File #E109466

Dimensions



All Dimensions in
Inches (Millimeters)