







TIME DELAY RELAYS

Product Summary

Macromatic offers a wide variety of time delay relays and accessories. Each one has different features and operating characteristics, allowing you to choose the exact product to meet your needs. Our time delay relays are available in either programmable or non-programmable versions. We offer both single or multiple function time delay relays. Choose between SPDT or DPDT relay outputs. Time delay relays are available as plug-in units for use with industry standard 8 & 11 pin octal or 11 pin blade sockets, or as an open board version for OEM applications. Choose between analog or digital-set time delay relays. Refer to the Selection Table on these two pages for more information.







	Standard Non-Programmable Single-Range Plug-in	Time Ranger Multi-Range Programmable Plug-in	Compact Non-Programmable Single-Range Plug-in
Series	TR-5	TR-6	SS-6 & SS-8
			
Timing Functions Available	<ul style="list-style-type: none"> * On Delay * Interval On * Flasher * Off Delay * Single Shot * Watchdog * Repeat Cycle * Delayed Interval 	<ul style="list-style-type: none"> * On Delay * Interval On * Flasher * Off Delay * Single Shot * Watchdog * Repeat Cycle * Delayed Interval 	<ul style="list-style-type: none"> * On Delay * Interval On * Off Delay * Single Shot
Timing Ranges Available	20 separate timing ranges from 0.02 Seconds to 24 Hours	16 field-programmable timing ranges covering up to 2 Hours (24 Hours on Dual Knob units) in one unit	6 separate timing ranges from 0.02 to 300 Seconds
Output Contacts	DPDT or SPDT 10A @ 240V AC 10A @ 28V DC 1/2HP @ 240V AC 1/3HP @ 120V AC B300/R300	DPDT 10A @ 240V AC 10A @ 28V DC 1/2HP @ 240V AC 1/3HP @ 120V AC B300/R300	SPDT 5A @ 120V AC 5A @ 28V DC 1/6HP @ 120V AC
Input Voltages	12V AC/DC, 24V AC/DC, 120V AC/DC & 240V AC	12V AC/DC, 24V AC/DC, 120V AC/DC & 240V AC	12V AC/DC, 24V AC/DC & 120V AC
Approvals	 with appropriate socket	 with appropriate socket	 with appropriate socket
See Page	34-39	40-43	44

TIME DELAY RELAYS

Product Summary

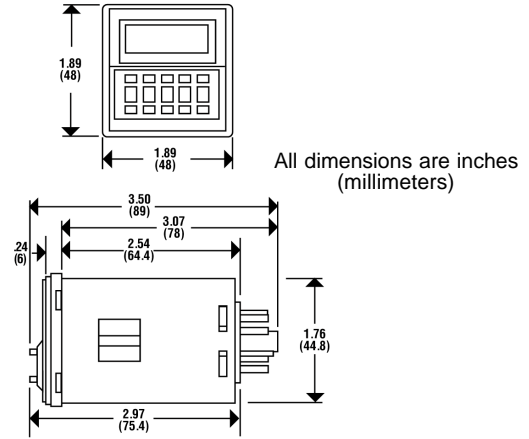
See pages 32 & 33 for a detailed description of all timing functions available. If you have any questions regarding the selection or application of time delay relays, either visit our on-line Technical Resource Center (www.macromatic.com) or call us at 800-238-7474.

Need modifications such as fixed time delays, remote adjustments or special pin configurations? We can do most of these modifications within our normal lead-times. See pages 50 & 51 for more information.

	Spade Base Non-Programmable Single Range Plug-in	Time Ranger Digital-Set Multi-Range Programmable Plug-in	Time Ranger III Digital-Set Multi-Function Multi-Range Programmable
Series	SS-4	TD-7	981
			
Timing Functions Available	<ul style="list-style-type: none"> * On Delay * Off Delay 	<ul style="list-style-type: none"> * On Delay * Interval On * Flasher * Off Delay * Single Shot <p>Available in both single function & multifunction</p>	<p><u>All in One Unit:</u></p> <ul style="list-style-type: none"> * On Delay * Interval On * Flasher * Off Delay (2 versions) * Interval On/Off Delay * On Delay/Off Delay * Delayed Interval
Timing Ranges Available	3 separate timing ranges from 0.1 to 300 Seconds	0.05 Seconds to 999 Hours programmable timing range	0.1 Seconds to 9,999 Hours programmable timing range
Output Contacts	DPDT 12A @ 240V AC 12A @ 30V DC 1/2HP @ 240V AC B300/R300	DPDT 10A @ 240V AC 10A @ 28V DC 1/2HP @ 240V AC 1/3HP @ 120V AC B300/R300	SPDT 3A @ 240V AC 5A @ 30V DC 1/2HP @ 240V AC
Input Voltages	12V AC/DC, 24V AC/DC & 120V AC	12V AC/DC, 24V AC/DC, 120V AC/DC & 240V AC	24-240V AC & 12-240V DC in one unit
Approvals			
See Page	45	46-47	48-49

TIME DELAY RELAYS

Time Ranger™ III
Digital -Set
Mul ti-Function
Mul ti-Range



- ◆ 8 field-selectable functions in one unit
- ◆ Push-button thumbwheels for digital-setting of time delay
- ◆ Universal AC/DC input voltage
- ◆ LCD display
- ◆ 0.1 Second to 9,990 Hours programmable timing range
- ◆ Panel, track or surface mounting
- ◆ 1/16 DIN style case
- ◆ 3A SPDT output contacts
- ◆

FUNCTION	INPUT VOLTAGE	PRODUCT NUMBER	WIRING/SOCKETS
8 FIELD-SELECTABLE FUNCTIONS ◆	24-240V AC 50/60Hz & 12-240V DC	9816U1	SEE DIAGRAMS ON PAGE 49 11 Pin Octal

- ◆ Functions Include: On Delay, Flasher, Interval/Off Delay, Off Delay (2 Versions), Interval, Delayed Interval and On Delay/Off Delay (see Page 49 for Further Details)
- See below for **Sockets & Accessories**.

Application Data

Voltage Tolerance:
 +10% of rated voltage.

Load (Burden):
 Less than 3 VA

Repeat Accuracy:
 +0.3%, +0.05 seconds (includes variation due to voltage and temperature changes).

Setting Accuracy:
 +0.5%, +0.05 seconds maximum.

Recycle Time:
 0.5 seconds maximum.

Temperature:
 -10° to 55°C (14° to 131°F)

Output Contacts:
 SPDT 3A Resistive @ 250V AC
 SPDT 5A Resistive @ 28V DC

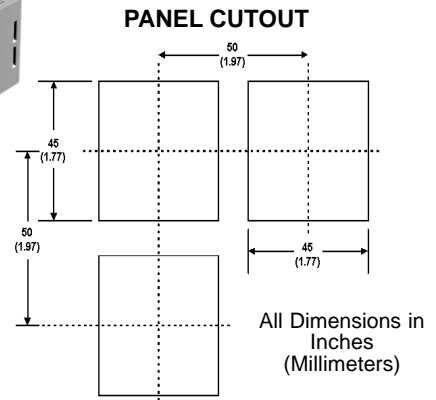
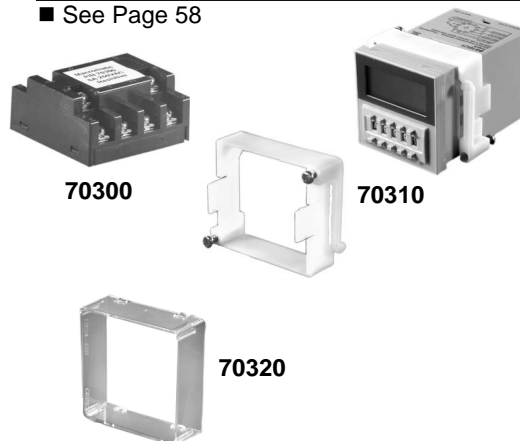
Life:
 Mechanical: 10,000,000 operations
 Full Load: 100,000 operations

Approvals:
 File #E170213 File #LR701134

Sockets & Accessories

DESCRIPTION	PRODUCT NUMBER
11 Pin Octal Socket (Surface or Track Mounting)	70170-D■
11 Pin Octal Socket (Back Mounting)	70300
Panel Mounting Adaptor	70310
Protective Cover	70320

■ See Page 58



800-238-7474

www.macromatic.com
whats-up@macromatic.com

TIME DELAY RELAYS

Time Ranger™ III Digital -Set Multi-Function Multi-Range

FUNCTION		OPERATION		TIMING CHART
MODE A On-Delay	Standard (Diagram 7)	Standard	Upon application of control power, the preset time begins. At the end of the preset time, the relay contacts transfer. Control power must be removed and reapplied to reset the time delay relay.	
	Triggered (Diagram 9)	Triggered	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the Start switch, the preset time begins. At the end of the preset time, the relay contacts transfer. Any closure of the Start switch is ignored until reset. The time delay relay is reset by closing the Reset switch or removing the control power.	
MODE B Flasher	Standard (Diagram 7)	Standard	Upon application of control power, the preset time begins. At the end of the preset time, the relay contacts transfer and remain in that condition for the preset time. At the end of this time, the relay contacts return to their normal condition and the sequence repeats until control power is removed.	
	Triggered (Diagram 9)	Triggered	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the Start switch, the preset time begins. At the end of the preset time, the relay contacts transfer and remain in that condition for the preset time. At the end of this time, the relay contacts return to their normal condition and the sequence repeats until the Reset switch is closed or control power is removed.	
MODE C Interval/Off-Delay	(Diagram 8)	Standard	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure or opening of the Start switch, the relay contacts transfer and the preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Any closure or opening of the Start switch during timing causes the time to reset.	
MODE D Off-Delay (I)	(Diagram 8)	Standard	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the Start switch, the relay contacts transfer and hold. Upon release of the Start switch, the preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Any application of the Start switch will reset the time.	
MODE E Interval	Standard (Diagram 7)	Standard	Upon application of control power, the relay contacts transfer and the preset time begins. At the end of the preset time, the contacts return to their normal condition. Control power must be removed and reapplied to reset the time delay relay.	
	Triggered (Diagram 9)	Triggered	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the Start switch, the relay contacts transfer and the preset time begins. At the end of the preset time, the contacts return to their normal condition. Any closure of the Start switch is ignored until reset. The time delay relay is reset by closing the Reset switch or removing the control power.	
MODE F Delayed Interval	Standard (Diagram 7)	Standard	Upon application of control power, the preset time begins. At the end of the preset time, the relay contacts transfer and remain in that condition for the preset time. At the end of this time, the relay contacts return to their normal condition and the sequence stops. Power must be removed and reapplied to reset the time delay relay.	
	Triggered (Diagram 9)	Triggered	Upon application of control power, the time delay relay is ready to accept trigger signals. At the end of the preset time, the relay contacts transfer and remain in that condition for the preset time. At the end of this time, the relay contacts return to their normal condition and the sequence stops. Power must be removed and reapplied to reset the time delay relay.	
MODE G On-Delay/Off-Delay	(Diagram 8)	Standard	Upon application of control power, the time delay relay is ready to accept trigger signals. Upon closure of the Start switch, the preset time begins. At the end of the preset time, the relay contacts will transfer. Upon opening of the Start switch, the preset time begins. At the end of the preset time, the output contacts return to their normal condition.	
MODE H Off-Delay (II)	(Diagram 8)	Standard	Upon application of control power, the time delay relay is ready to accept trigger signals. Closure of the Start switch is ignored. Upon release of the Start switch, the relay contacts transfer and the preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Opening the Start switch during timing resets the time.	

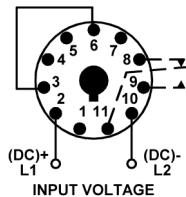


DIAGRAM 7

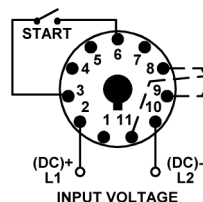


DIAGRAM 8

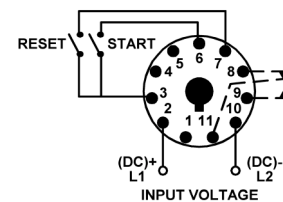


DIAGRAM 9