



Solid State Timers and Controllers



EPC-13793

Dual Output Countdown Timer



The EPC-13793 is a modified version of the Artisan model 4970 microcontroller based countdown interval timer with dual SPNO output contacts. During a timing cycle output relay #1 is energized and the display will countdown to zero, at which time output relay #1 de-energizes, output relay #2 energizes for 1 second, and the internal audible alarm starts. Pressing the START/STOP switch de-energizes the alarm and resets the display to the original cycle time. The time range is 00:01 - 99:59 minutes : seconds. Prior to the start of a cycle an LED on the front panel will be OFF. When running a timing cycle the LED will flash, and at the end of the cycle the timer will energize the LED will turn ON steady, and when idle the LED is off.

Two arrow buttons on the front panel are used to set the time. Hold the UP ARROW button down to increase the time. The longer the button is held down, the faster the rate at which the time will increase. The DOWN ARROW button is used in the same manner as the UP ARROW button except it will cause the time to decrease. The time is increased or decreased in 30 second increments. Using the UP ARROW and DOWN ARROW buttons in this manner permits accurate setting of countdown time.

The START/STOP button performs three functions. Pressing the START/STOP button while the timer is not active will cause the timer to begin counting down the time on the display and activate the output relay #1 contacts. Pressing the START / STOP button while the timer is active will stop the timer, de-energize the output relay #1 contacts, and turn the LED OFF. The timer will display the time remaining in the cycle when it is interrupted by the START/STOP button, and the value will flash to indicate that the cycle has been paused. If the START/STOP button is pressed again the output relay #1 will energize, the timer will continue timing from the point it was stopped, and the display of the cycle time remaining will stop flashing. Should the START/STOP switch be held down for longer than two seconds while it is in the paused mode the timer will reset and the display will return to the original starting time and the LED will turn OFF. Should power fail during a timing cycle the units stores the current time and upon restoration of power the timer will complete the preset timing cycle. The EPC-13793 also always remembers the last interval time and ALARM time selected and when first powered up resets to that time.

The ALARM button allows the user to set an elapsed time at which the internal alarm will sound during a cycle. The time is set by pressing and holding the ALARM button while using the UP and DOWN arrows to change the time. The controller will limit the alarm time to be less than the currently programmed interval cycle time. The default alarm time is 0:00 which disables it. The ALARM time is saved on power down in the same manner as the last interval time. When a time cycle is running and the alarm time has elapsed the internal alarm will sound for 10 seconds. For example, a cycle time 10:00 and an alarm time of 2:00 would cause the alarm to sound for 10 seconds once the controller has counted down from 10:00 to 8:00.

The buttons marked A through D are used to save and recall preset cycle and alarm times, saving operator time and minimizing error when changing interval cycle times and alarm times. To save the current interval and alarm times into one of the preset locations, press and hold the A, B, C, or D preset button for 2 seconds and the controller will double chirp to indicate the times have been saved. To recall any preset time, press and quickly release the appropriate button and the time values are loaded and displayed.

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Stir Alarm

The Stir Alarm feature is designed to prevent high temperature limit alarms when the equipment is first powered on. When enabled, the stir alarm starts a 6 minute timing cycle upon application of power to the timer. Pressing the START/STOP button to start a timing cycle stops this countdown timer and disables this feature until power is removed and re-applied.

If the six minutes delay period is allowed to elapse, the timer displays **Stir** and **-Oil** on the LED display, outputs the same beeper pattern as the end of the timing cycle, and cycles the output relay contacts dependant on the configuration below. This pattern of display, beeping, and output contact cycling continues until the user presses the ALARM button acknowledging the Stir Alarm. The Stir Alarm relay contacts are closed upon the application of power, and change to the open state once the Stir Alarm mode starts. The contacts are open for 1 minute, then close for 1 minute, then open again on a continuous basis until the Stir Alarm is acknowledged.

To configure the Stir Alarm feature, press and hold the ALARM button and apply power to the timer. The LED display will show **Stir** until the ALARM button is released. After the button release, the LED display shows one of the four modes in the configuration table below. To change the Stir Alarm mode, press one of the four preset time keys (A - D) and the LED display changes to the selected state. To use the controller normally, simply remove and re-apply power and the controller is now in the standard operating mode.

The timers are set at the factory to the first alarm configuration which enables the beep pattern but not the output relay contacts.

Stir Alarm Configuration

Key	Display	Output 1	Output 2	Stir Alarm
A	-AL-	On during timing cycle	On 1 sec @ cycle end	Enabled, beep only
B	-OFF	On during timing cycle	On 1 sec @ cycle end	Disabled
C	PrES	On during timing cycle	Temp limit control	Enabled
D	LiFT	Temp limit control	On 1 sec @ cycle end	Enabled

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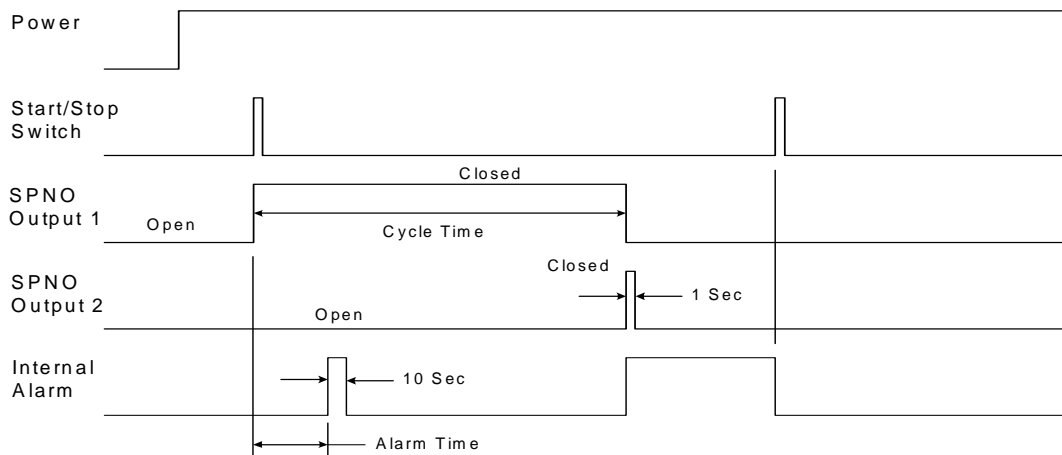


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Specifications

- Timing Mode:** Interval countdown with dual outputs.
- Operating Voltage:** 115V AC $\pm 10\%$ 50/60 Hz (-2) 230V AC $\pm 10\%$ 50/60 Hz (-3) @ 7W max.
- Time Base:** 00:01 - 99:59 minutes:seconds, adjustable in 30 second increments.
- Timing Accuracy:** $\pm 1.0\%$ of setting.
- Digital Display:** Four (4) digit red LED, 0.5 inch high characters displays remaining timing interval.
- Timing Cycle Memory:** 4 preset times plus the last cycle time kept in non-volatile memory. Preset times are accessed and programmed using the A, B, C, & D buttons. Each saved cycle time is saved with an alarm time.
- Default Preset Times:** From the factory the preset times are 21:00 (A), 18:00 (B), 7:00 (C), and 4:00 (D), all times in minutes and seconds. Alarm times for presets are all 0:00 (off)
- Front Panel Indicator:** An LED indicates the timer state.
- Front Panel Switches:** Two for setting the cycle time, one for setting the alarm time, and one for starting and stopping the timer. Four preset time buttons for programming and recalling preset alarm and cycle times. Switches are raised membrane-type mounted on black pc board material front panel.
- Audible Alarm:** The solid state alarm sounds at the end of the timing cycle until the Start/Stop switch is pressed, and for 10 seconds after the programmed alarm time has elapsed in a time cycle. Output rated for 103dB at 2 ft.
- Output Contact Ratings:** Two SPNO relay output contacts rated for 5 Amperes minimum. Relay 1 energizes during timing cycle, Relay 2 energizes at end of timing cycle for 1 second.
- Operating Temperature:** 0°C to 70°C.
- Mounting:** 2.62 sq. cutout accepts timer which is secured with rear attached bracket & nut. Nut must not be tightened greater than 3 inch pounds, or product may be damaged. 6 (6) .25" Quick Connect terminals.
- Wiring:** Certified to UL Component-Appliance Controls US Standards ATNZ2, Component-Appliance Controls Certified For Canada ATNZ8, UL File E47858. Conforms to CE Electromagnetic Compatability directive dated 1/96 and Low Voltage directive dated 1/97.
- Agency Approvals:** Certified to UL Component-Appliance Controls US Standards ATNZ2, Component-Appliance Controls Certified For Canada ATNZ8, UL File E47858. Conforms to CE Electromagnetic Compatability directive dated 1/96 and Low Voltage directive dated 1/97.
- Data Sheet Revision Date:** October 18, 2011

Timing Diagram



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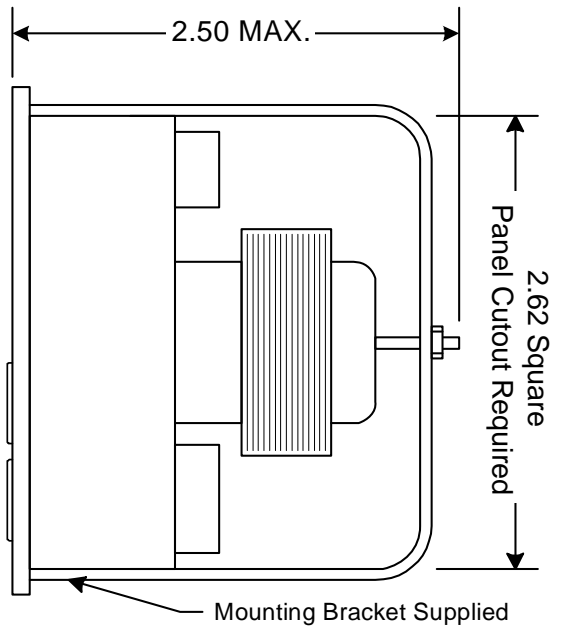
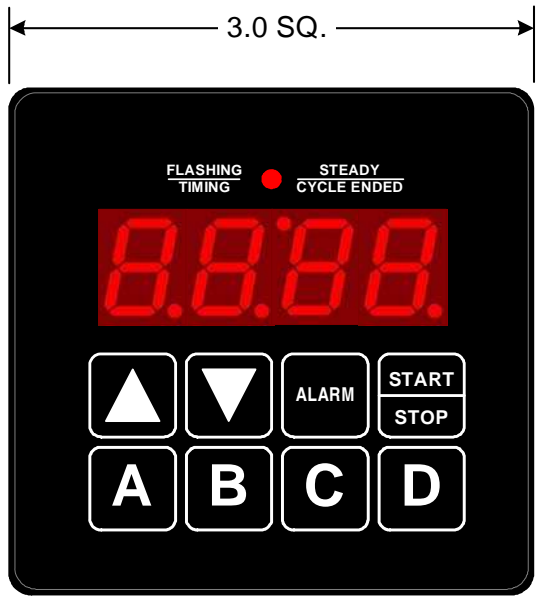
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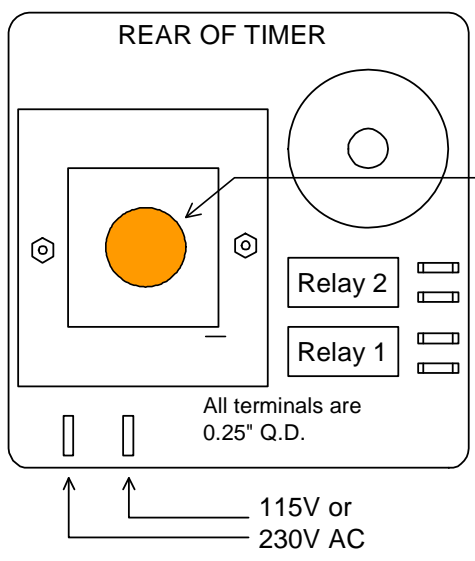


Solid State Timers and Controllers

Mechanical.....



Wiring.....



Ordering Information.....

Model No.	Operating Voltage
EPC-13793-2	115V AC
EPC-13793-3	230V AC

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