

# Electronic Timer - Series Staircase

- Multi Function/Mono Function Staircase Timer in compact 17.5mm
- Time Range: 0.5min - 20min
- Long Run mode with Time range from 0.5h - 20h
- Functions with Pre-Warning, Cut-Off & Release Delay
- Maintenance Mode available
- Switch indications (Glow-lamps / Pilot lamps) upto 50 mA
- 3 Wire & 4 Wire Configurations





## Ordering Information

Casing Colour	Mode	Output Relay Contact
B Casing: White & Knob: Red	1 C Multi Mode	1 1 'NO', 16A, 120A/20ms (Peak Inrush Current)
C Casing: Dark Grey & Knob: Green	2 B Mono Mode	2 1 'NO', 16A, 80A/20ms (Peak Inrush Current)

\* For Mono Mode the available mode is 'Timing Step with Release Delay & Cut-Off'

# Electronic Timer - Series Staircase



<b>Cat. No.</b>	<b>27B1C3B1</b>	
<b>Parameters</b>	<b>Staircase Timer</b>	
Timer Description	<b>Staircase Timer</b>	
Modes	1) Staircase Relay 2) Staircase Relay with Pre-Warning 3) Staircase Relay with Cut-Off 4) Staircase Relay with Cut-Off & Pre-Warning 5) Timing Step with Release Delay & Cut-Off 6) Timing Step with Release Delay, Cut-Off & Pre-Warning 7) Long Run 8) Long Run with Pre-Warning 9) Step Relay 10) Permanent ON 11) Maintenance Mode	
Supply Voltage (⊕)	230 VAC	
Supply Variation	- 25% to +15% (of ⊕)	
Frequency	50 Hz	
Power Consumption (Max.)	3 VA	
Timing Ranges	0.5m, 2m, 4m, 6m, 9m, 15m, 20m (The unit will change from minutes to hours for 'Long Run' modes )	
Reset Time	500 ms (Max.)	
Signal Sensing Time	40 ms < Ts < 5 s (For modes 1, 2, 3, 4, 5, 6, 9) & Ts ≥ 5s (For modes 7, 8, 11)	
Maintenance Mode	If the Relay is 'OFF' and the signal is present for 5 sec or more (Ts ≥ 5 s), the timer will enter 'Maintenance mode'	
Setting Accuracy	± 5% of Marking	
Repeat Accuracy	± 1%	
Output	Relay Output	1 NO (Pole is internally shorted with 'Live')
	Contact Rating	16A @ 230 VAC (Resistive)
	Electrical Life	1X10 <sup>5</sup>
	Mechanical Life	5X10 <sup>6</sup>
Utilization Category	AC - 15	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A
	DC - 13	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A
Operating Temperature	-10°C to +60°C	
Storage Temperature	-15°C to +70°C	
LED Indication	Green LED → Power ON, Yellow LED → Relay ON	
Enclosure	Flame Retardant UL94-V0	
Dimension (W x H x D) (in mm)	18 X 85 X 65	
Weight (unpacked)	70 g	
Mounting	DIN Rail	
Certification	 	
Degree of Protection	IP 20 for Terminals, IP 40 for Enclosure	

## EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Voltage Dips & Interruptions (DC)	IEC 61000-4-29
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

## Environmental

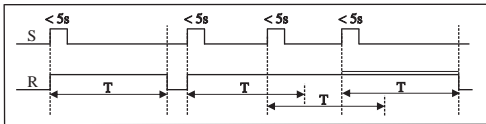
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

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## FUNCTIONAL DIAGRAM

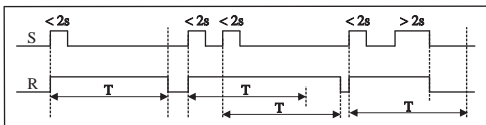
### 1. STAIRCASE RELAY

On initial signal, the output closes & timing starts for the preset duration. Subsequent signals during the run time will extend the time duration by the full preset value.



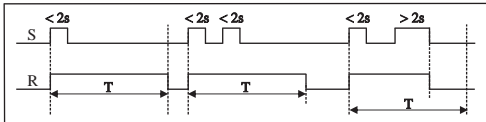
### 3. STAIRCASE RELAY WITH CUT-OFF

On initial signal, the output closes & timing starts for the preset duration. Subsequent signals during the run time will extend the time duration by the full preset value. If a signal of duration more than 2 seconds is applied, the output contacts open instantly.



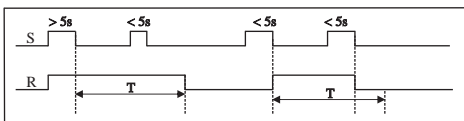
### 5. TIMING STEP WITH RELEASE DELAY & CUT-OFF

On initial signal, the output closes & timing starts for the preset duration. During run time, if a signal of duration less than 2 seconds is applied, it is ignored. If the duration is more than 2 seconds, the output contacts open instantly.



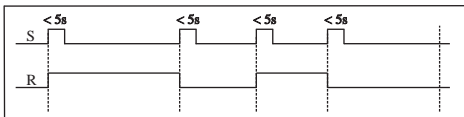
### 7. LONG RUN

On initial signal, the output closes & timing starts for the preset duration. On completion of the time duration the output contacts open. Any signal during the run time is ignored.



### 9. STEP RELAY

After every signal, the output changes state, alternately switching from open to closed & vice versa.



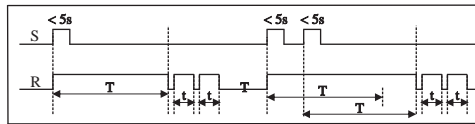
### 11. MAINTENANCE MODE

If the relay is OFF and a signal of duration more than 5 seconds is applied, the maintenance mode is activated. In this mode the output contacts close for a duration of 60 minutes after which it opens. During this period if a signal of duration more than 5 seconds is applied, the maintenance mode is interrupted and the output contacts open. The mode can be activated from any one of the modes (Mode 1, 2, 3, 4, 5, 6, 9) provided that the output contacts are open initially.

S: Supply, R: Relay Output, T: Preset Time, t: 10 seconds

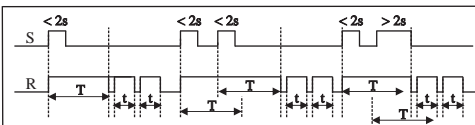
### 2. STAIRCASE RELAY WITH PRE-WARNING

On Initial Signal, the output is switched ON & timing starts for the preset duration. On completion of the set time duration the output blinks once & after a delay of 10 seconds, it blinks twice. After a further delay of 10 seconds, the output is switched OFF. Any signal during the run time or the pre-warning period will extend the time duration by the value indicated on the timer during run time.



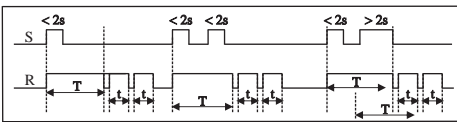
### 4. STAIRCASE RELAY WITH CUT-OFF & PRE-WARNING

On Initial Signal, the output is switched ON & timing starts for the set duration. On completion of the set time duration the output blinks once & after a delay of 10 seconds, it blinks twice. After a further delay of 10 seconds, the output is switched OFF. Any signal during the run time or the pre-warning period will extend the time duration by the value indicated on the timer during run time. If a signal of duration 2 seconds or more is applied, then the output is switched OFF after completion of the pre-warning period.



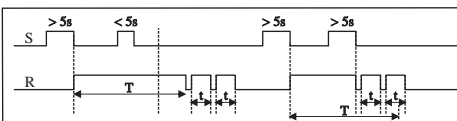
### 6. TIMING STEP WITH RELEASE DELAY & CUT-OFF & PRE-WARNING

On Initial Signal, the output is switched 'ON' & timing starts for the set duration. On completion of the set time duration the output blinks once & after a delay of 10 seconds, it blinks twice. After a further delay of 10 seconds, the output is switched OFF. Any signal during the run time or the pre-warning period will extend the time duration by the value indicated on the timer during run time. If a signal of duration 2 seconds or more is applied, then the output is switched OFF after completion of the pre-warning period.



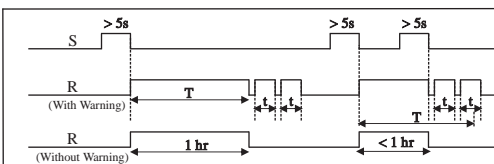
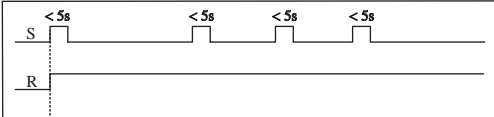
### 8. LONG RUN WITH PRE-WARNING

On Initial Signal, the output is switched 'ON' & timing starts for the preset duration. On completion of the set time duration the output blinks once & after a delay of 10 seconds, it blinks twice. After a further delay of 10 seconds, the output is switched OFF. During run time, if a signal of duration less than 5 seconds is applied, it is ignored. If the duration of the signal is 5 seconds or more, then output is switched OFF after completion of the pre warning period.



### 10. PERMANENT ON

In this mode the output contacts are permanently closed until the mode is changed and the device is reset.



Pre-Warning: On completion of the set time duration the output blinks once & again blinks twice after a delay of 10 seconds and the contacts open after a further delay of 10 seconds.