

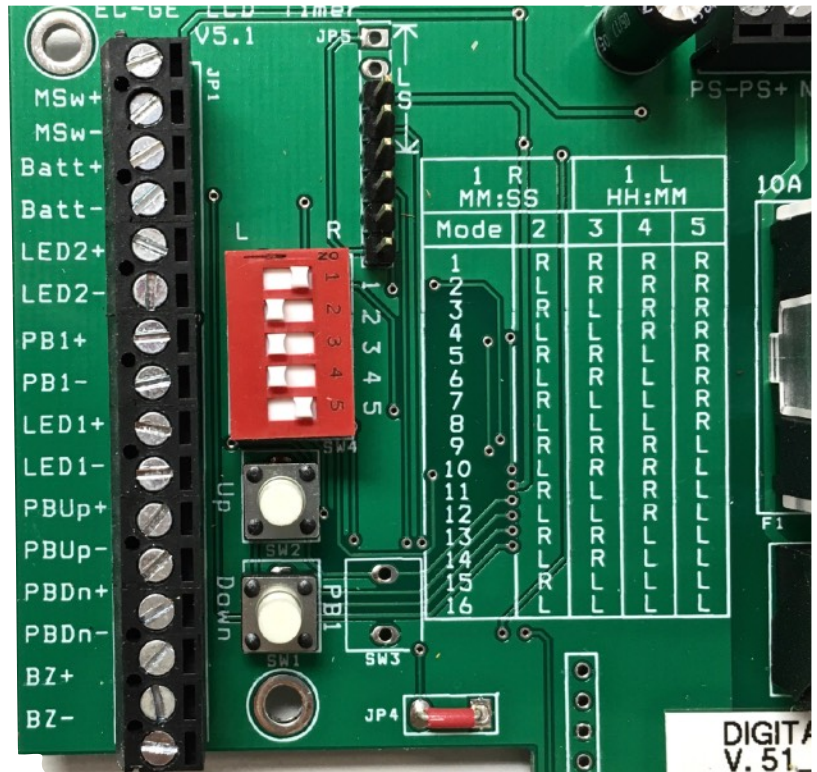
T5 TIMER MODES rev. 5.10_02

1. Display Logic

A. When displaying in HH:MM, it will not be obvious from the display that the timer is counting, the four dots at the bottom of the display “chase” from left to right to indicate its counting down.

2. PB2 and PB3 - Setting time

- A. The two digits left of the colon are incremented by PB2 and decremented by PB3. (regardless if display is indicating HH:MM or MM:SS) Holding PB1 down while simultaneously pressing PB2 or PB3 will change the digits *right* of the colon instead. In any case if PB1 or PB2 is held down, the digits race forward quickly. (increment to the next higher number every 100ms)
- B. Depressing PB2 and PB3 together will clear the display to zero.



6. MODES

For all modes, switch position 1 determines hours or minutes. The default position is the the right which gives minutes/seconds. The other switch positions 2,3,4,5 determine the other behaviours as in chart below.

LED3 is not used for battery applications.

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MODE	SWITCH POSITION					DESCRIPTION
	1	2	3	4	5	
1	L / R	R	R	R	R	EARLY WARNING ON LED1
2	L / R	L	R	R	R	MANUAL STOP - CANNOT CANCEL
3	L / R	R	L	R	R	PROXIMITY SWITCH WITH EARLY WARNING
4	L / R	L	L	R	R	PAUSING
5	L / R	R	R	L	R	AUTOMATIC STOP - WITH CANCEL
6	L / R	L	R	L	R	EARLY WARNING ON LED2
7	L / R	R	L	L	R	GUARD DUTY
8	L / R	L	L	L	R	PROXIMITY SWITCH / SPRAY RINSE
9	L / R	R	R	R	L	MACHINE RUN TIME
10	L / R	L	R	R	L	ON DELAY
11	L / R	R	L	R	L	REPEAT CYCLE
12	L / R	L	L	R	L	FUTURE USE
13	L / R	R	R	L	L	FUTURE USE
14	L / R	L	R	L	L	FUTURE USE
15	L / R	R	L	L	L	FUTURE USE
16	L / R	L	L	L	L	FUTURE USE

1. Mode 1 - EARLY LED1

LED1 activates before the end of a cycle. to give an early warning to an operator. The amount of “early warning” time is settable as follows: holding all three buttons simultaneously for 5 seconds; then when the 3 buttons are released, the timer is in a state to set the “early” time. (indicated by the display blinking) The “early” time is set in the same way as the time is normally set with PB1,PB2, PB3.. After the “early” time is set, the display flashes this time for 5 seconds and then after that the time becomes “locked in” and the flashing stops.

For example:all 3 buttons are depressed for 5 seconds, then released. Using PB1 and PB2 a time is set for 40 seconds. This time blinks for 5 seconds and then displays steadily. Operator must now set the desired countdown time again if it is to be different from the “early” time of 40 sec.. When the next cycle runs, PB1 illuminates 40 seconds before the end of the cycle. At the end off the cycle, BZ/

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LED2/relay activate as usual. This “early time” is erased (set to zero) by holding all 3 buttons down for 5 seconds.

PB1		⤴					⤴
DISPLAY	TIME 1	COUNTDOWN				OVERRUN	TIME 1
LED1			EARLY TIME				
LED2							
LED3							
BZ		CHIRP		2 SEC.			
RLY	OPEN	CLOSED					OPEN

MODE 1 - CHART 1 – EARLY LED1

PB1		⤴				2 SEC. ⤴		⤴
DISPLAY	TIME 1	COUNTDOWN				LAST TIME FLASHING		TIME 1
LED1			EARLY TIME					
LED2								
LED3								
BZ		CHIRP		2 SEC		2 SEC		CHIRP
RLY	OPEN	CLOSED				OPEN		

MODE 1 - CHART 2 – EARLY LED1 WITH CANCELLATION

PB1		⤴				⤴	
DISPLAY	00:00	COUNTUP			00:00		
LED1							
LED2					2 sec.		
LED3							
BZ		CHIRP			CHIRP		
RLY	OPEN	CLOSED			OPEN		

MODE 1 - CHART 3 – COUNT UP

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2. Mode 2 - MANUAL STOP, CANNOT CANCEL

- Same as cycle 1 but cycle cannot be cancelled.
- Setting “early warning” is the same as other modes. See mode 1 for details.

PB1		⤴							⤴	
DISPLAY	TIME1	COUNTDOWN						OVERUN	TIME1	
LED1										
LED2		EARLY WARNING								
LED3										
BZ		CHIRP		2 sec.						
RLY	OPEN	CLOSED						OPEN		

MODE 2 - CANNOT CANCEL

3. Mode 3 - MECHANICAL TRIGGER

Not used for battery applications.

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4. Mode 4 - PAUSING

- A. Counts down from a set value but time can be paused by pressing PB1. When paused, the display flashes the time.
- B. If PB1 is pressed again the countdown resumes. (and display stops flashing) PB1 can be pressed to pause the timing an unlimited number of times. After the set time has elapsed, BZ/LED1/LED2/relay act as usual.
- C. If set time starts is zero then it counts *up* and can be paused/resumed in the same way. Count-up can be terminated when by holding PB1 for 2 seconds. In this case BZ sounds to indicate the cycle is cancelled.

PB1		↑		↑		↑			↑
DISPLAY	TIME	COUNTDOWN		HOLD		COUNTDOWN		OVERRUN	TIME
LED1									
LED2									
LED3									
BZ		CHIRP		CHIRP		CHIRP			
RLY	OPEN	CLOSED		OPEN		CLOSED			OPEN

MODE 4 - CHART 1 — PAUSING COUNT DOWN

PB1		↑		↑		↑		↑		2 SEC. ↑
DISPLAY	00:00	COUNT UP		HOLD		COUNT UP		HOLD		00:00
LED1										
LED2										
LED3										
BZ		CHIRP		CHIRP		CHIRP		CHIRP		2 SEC
RLY	OPEN	CLOSED		OPEN		CLOSED		OPEN		

MODE 4 - CHART 2 — PAUSING COUNT UP



5. Mode 5 -AUTO STOP WITH CANCEL

Not used for battery applications.




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6. EARLY LED2



Identical to mode 1 except the behaviors of LED1 and LED2 are reversed from mode 1. See mode 1 for written description.

PB1							
DISPLAY	TIME 1	COUNTDOWN				OVERRUN	TIME 1
LED1							
LED2			EARLY TIME				
LED3							
BZ		CHIRP		2 SEC.			
RLY	OPEN	CLOSED				OPEN	

MODE 6 - CHART 1 - EARLY LED2

PB1							
DISPLAY	TIME 1	COUNTDOWN				LAST TIME FLASHING	TIME 1
LED1							
LED2			EARLY TIME				
LED3							
BZ		CHIRP		2 SEC		2 SEC	CHIRP
RLY	OPEN	CLOSED				OPEN	

MODE 6 - CHART 2 - EARLY LED2 WITH CANCELLATION

PB1						
DISPLAY	00:00	COUNTUP			00:00	
LED1						
LED2						
LED3						
BZ		CHIRP			CHIRP	
RLY	OPEN	CLOSED			OPEN	

MODE 6- CHART 3 – COUNT UP

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7. Mode7 - GUARD DUTY

- Counts down but the time is reset to the starting value if PB1 is pressed anytime before the end of a cycle. If time elapses then LED2 and relay activate. (this is like the doomsday counter on the TV show “Lost”) Cycle cannot be stopped except by disconnecting power.
- Setting “early warning” is the same as other modes. See mode 1 for details.

PB1		↑		↑		↑		MISSED	↑
DISPLAY	TIME	††	††	FULL COUNTDOWN	OVERUN				
LED1			✱		✱		✱		
LED2							flashing		
LED3									
BZ		CHIRP		CHIRP		CHIRP			CHIRP
RLY	OPEN								OPEN

MODE 7 - GUARD DUTY

- †† PARTIAL COUNTDOWN
- ✱ EARLY WARNING (steady output)

8. Mode 8 - SPRAY RINSE

- Not used for battery applications.

9. Mode 9 - MACHINE RUN TIME

- Not used for battery applications.

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10.Mode 10 ON-DELAY

- Ability to set a delay time before countdown cycle begins.
- Delay is programmed by holding down 3 buttons (PB1, PB2, PB3) for 5 seconds. (like programming the “early warning” in mode 1 and 6.
- When cycle starts, set time displays, and the “chaser dots” on the bottom of the screen activate (left to right) until the programmed delay is over, then countdown begins as normal.
- Cancel cycle by holding PB1 down 2s..
- MSw not used.

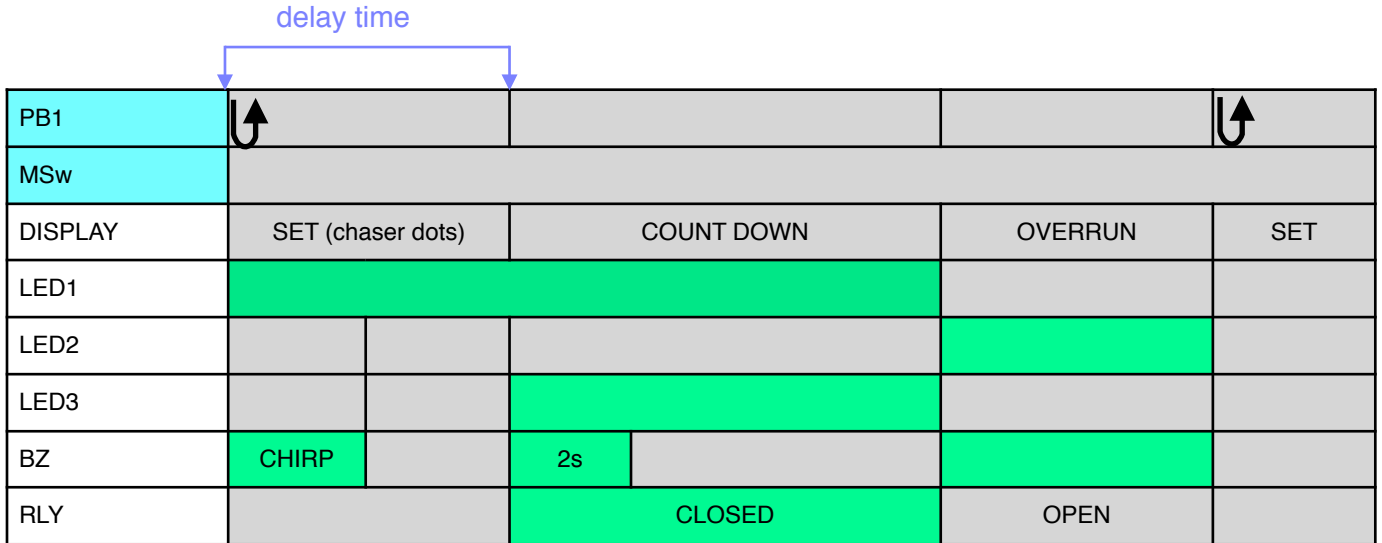


CHART 10.1 - CYCLE 10 COMPLETE CYCLE

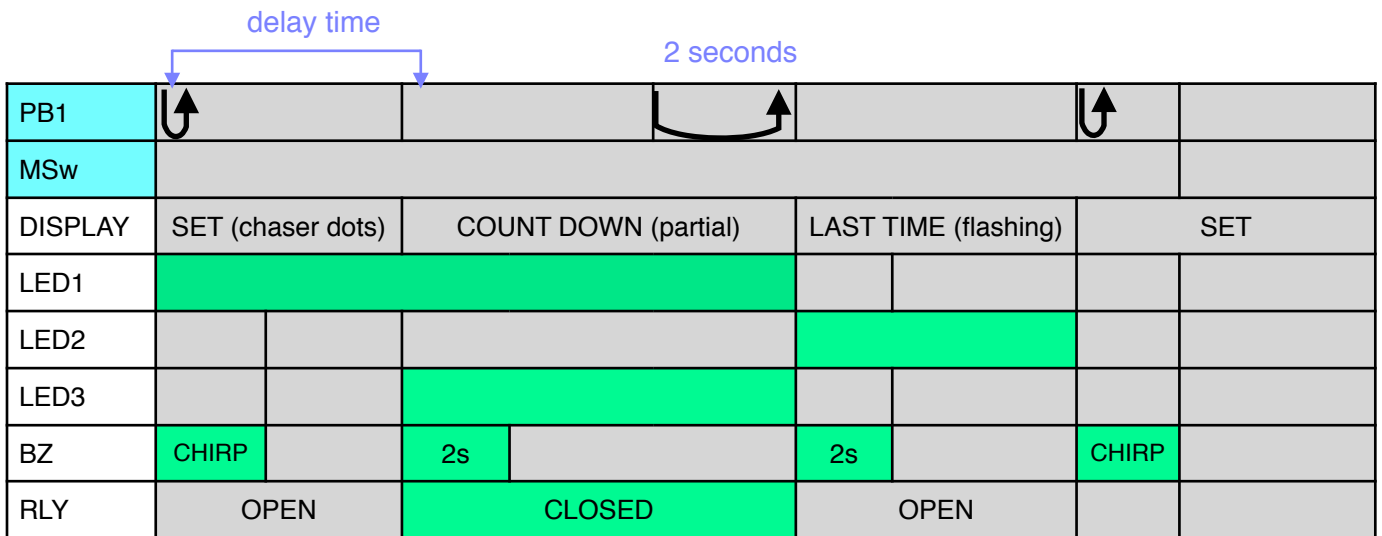


CHART 10.2 - CYCLE 10 WITH CANCELLATION