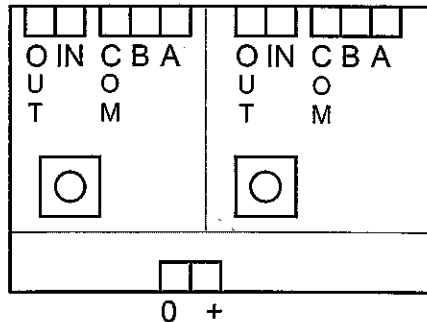


INSTRUCTIONS FOR #83690 DUAL TIMER

The Dual Timer has two separate timing circuits. Each of these, when activated, switches relay contacts (capacity: 2 amps) for an adjustable time (from a few seconds to approximately 5 min).

The Dual Timer is powered by 12 volts DC or 16 volts AC connected to the "+" (positive) and "0" (negative) terminals. After making these connections, the unit can be tested: Touch a wire between an "OUT" terminal and either of the trigger terminals ("IN"). A click will be heard as the relay switches and the LED will light for the length of the timing, which is adjusted by rotating the variable resistor with a screwdriver. Turn clockwise for shorter times.

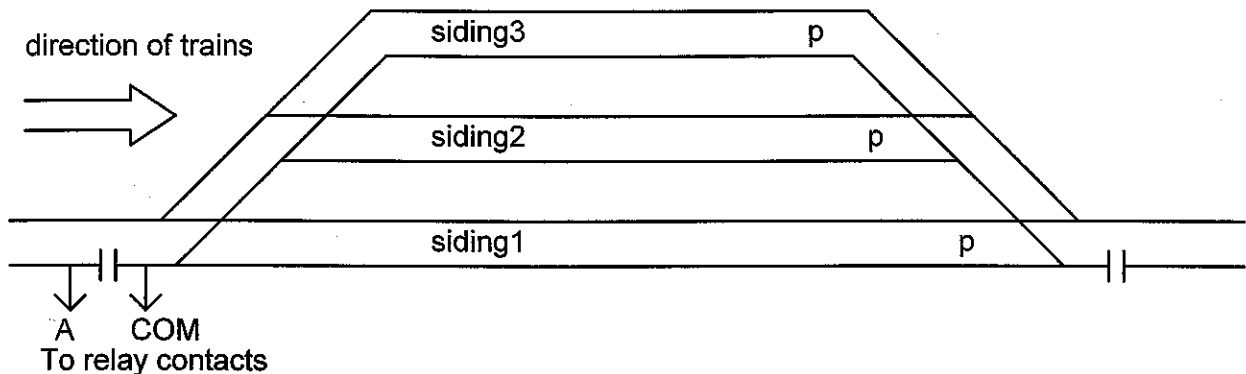


When the timer is off (LED off):
A is connected to COM
B is disconnected from COM

When the timer has been triggered (LED on):
B is connected to COM
A is disconnected from COM

For permanent installation, the trigger input can be wired to a push button switch or momentary toggle switch connected between the "OUT" and the "IN" terminals, or to terminal 2 of an IRDOT-1, or to the "P" terminal of an IRDOT-P. Note that the IRDOT-1 or IRDOT-P must use the same power supply as the Dual Timer and they should have the 0 volts terminals connected together (terminal 6 of the IRDOT-1 to "0").

One timer can be wired to trigger another timer at the end of its timing cycle. "OUT" from the first timer is wired to "IN" of the second. If the unused "OUT" is wired back to the unused "IN" terminal, then each timer will trigger the other so that they will operate alternately. "OUT" switches to 0 volts at the end of the timing cycle (open collector transistor).



The relay contacts are electrically separate from the unit. They can be wired to either switch the power on or to switch the power off during the timing cycle.

AUTOMATIC OPERATION OF STORAGE SIDINGS

Storage loops can be automated by fitting an IRDOT-P at the end of each siding where the train is to stop. When the IRDOT-P detects the train arriving, it will switch the points for the next line... isolating the arriving train and activating the departing one.

Train enters siding 1 reaches IRDOT-P at A, which switches points a b c and d to siding 2. Train departs siding 2.

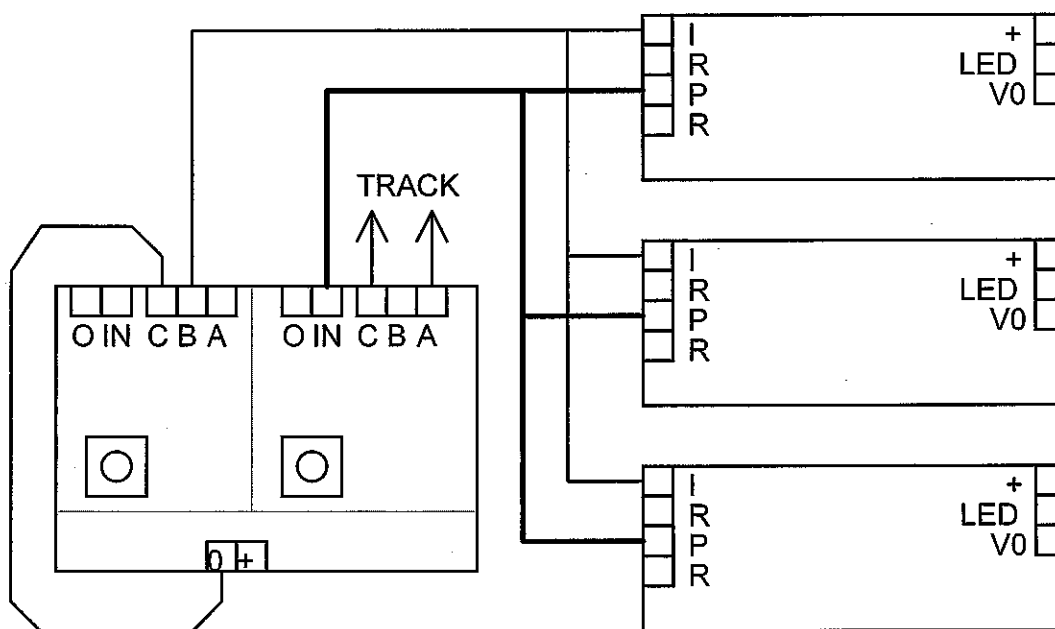
Train enters siding 2 reaches IRDOT-P at B, which switches points b and c for siding 3. Train departs siding 3.

Train enters siding 3 reaches IRDOT-P at C which switches points a and d for siding 1. Train departs siding 1.

The sequence now repeats.

This can be extended to any number of sidings. Self-isolating points are used, so that, when the IRDOT-P switches the point, the point isolates the arriving train and energizes the departing one.

The Dual Timer is used in this arrangement to give a delay between a train arriving and the next train departing. It prevents the departing train from activating the IRDOT-P it is crossing and avoids a derailment. On first detecting the train, the IRDOT-P generates a 0 volts pulse. All the pulse ("P") terminals are wired together into "IN" of the left hand timer. The left hand timer opens its relay for the timing interval to isolate all the sidings. At the end of the timing interval, "OUT" of the left hand timer triggers "IN" of the right hand timer, thereby starting this timer. The right hand timer's relay switches 0 volts to all the "I" terminals of the IRDOT-Ps, thus stopping them from operating the points for the timing interval.



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