QUASAR PROJECT KIT # 3148T1 - SIMPLE PHOTOGRAPHIC TIMER

The first of a series of timer kits based on the 3148 hardware platform. This is a simple down timer with selectable preset times. At the end of the selected time period the output goes 'low' for 2 seconds.

There are six (6) preset times: 60, 90 120, 300, 600 and 900 seconds (1, 1.5, 2, 5, 10 and 15 minutes).

Refer to the "**3148 4-DIGIT TIMING MODULE**" documentation for details of hardware features, circuit description and assembly instructions.

TIMER SPECIFICATIONS

Timing ranges	60, 90, 120, 300, 600, 900 secs
Timing resolution	1/10 second
Inputs	Start, Stop and Reset
Output	2 second active low Open collector NPN transistor, 100mA @ 30V
Display	4-digit 7-segment with decimal point, 14mm RED LED
Supply voltage	9 to 12V DC
Supply current	30 to 50mA, depending on the number displayed.
Physical size	51mm x 66mm (2.0" x 2.6")
Connection	10-way right-angle SIL header pins, 0.1" spacing

OPERATING INSTRUCTIONS
The 'power up' default time is 60 seconds (the display shows **60.0**). Pressing the STOP button cycles through the other preset time delays.

Pressing the START button starts the timer. The display starts running down towards zero in tenths of a second. When it reaches zero (**0.0**) the open collector output pulses low for 2 seconds and the timer then resets itself to the selected time delay.

During the count down time, pressing the START button again has no effect. Pressing and holding the STOP button 'freezes' the timer at its current value. Releasing the STOP button then resets the timer to the previously selected time delay, ready to start again.

At any time the timer can be reset via its RESET input. The timer will reset to the previously selected time, ready to start again.

APPLICATIONS
This timer was developed after an enquiry from a hobbyist who wanted a simple 60 second timer when printing photographs. At the end of 60 seconds a beeper or buzzer would sound to indicate 'times up'.
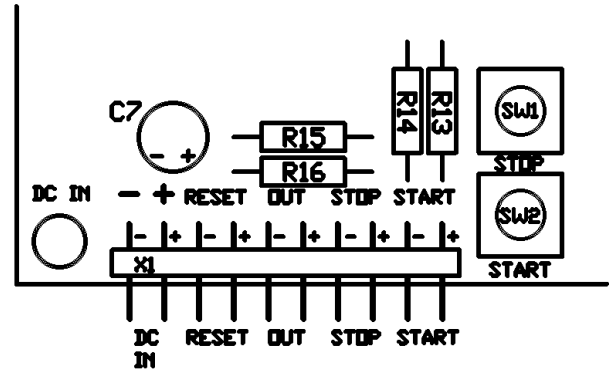
After some discussion about other photographic uses it was decided to add some extra ranges as well. We also decided on an open collector style output rather than an on-board buzzer. This enabled the kit to drive other devices such as relays, making it more useful in other applications.

Open Collector Output. For more information about what an open collector output is read the FAQ sheet at **www.quasarelectronics.com/ds.htm#3148**

CONNECTING TO THE TIMER
A 10-way header strip provides external connection to the timer, including power. All the inputs and the output are organized as 'pairs' of pins, with each input or output having a corresponding ground pin, as per the following diagram.

The '+' sign indicates the actual input or output pin and the '-' sign indicates its associated ground pin.

Note: When using the output to switch a load (relay, buzzer, etc) connect the load between the output pin and a positive DC voltage. For example, if switching a 12V relay connect the relay between the output pin and +12V.

OTHER TIMING MODULES
There are other firmware IC's available for 3148:

1. **3148T2**. Stopwatch with Pause function
2. **3148T3**. 40KHz Auto Ranging Frequency Meter
3. **3148T0**. Programmable Down Timer counting down in seconds from a maximum of 10,000 sec
4. **3148T4** Programmable Down Timer counting down in minutes from a max of 10,000 minutes
5. **3148T5** Programmable Down Timer counting down in hours from a maximum of 10,000 hours

See out website at **www.quasarelectronics.com** for details.

You can contact our technical support by email:

support@quasarelectronics.com

Note we do not release the source code for these kits.