



**DT1**

**DIGITAL TACHO**

**OPERATING**

**INSTRUCTIONS**

10-09-13

## How it Works

The Otto Racing **DT1** Digital Tacho features include:-

- \* Digital Tacho with Maximum RPM recall
- \* 2 Maximum RPM Tell-Tale Modes
- \* Dedicated 8 LED Array for RPM. Fully programmable to operate within any RPM range

The display consists of an arc of 8 LED's and a 4 and a half digit LCD (liquid crystal display). The 8 RPM LED's can be configured to start and stop at any RPM allowing it to operate within a very narrow RPM band. This is done by setting the RPM for the first LED and then setting the step between LED's. For example the first LED could be set to 5000 rpm and the step size could be set to 200 rpm. The first LED would then come on at 5000 rpm, and subsequent LED's would come on at 5200, 5400, 5600, 5800, 6000, 6200, and 6400 rpm.

There are two RPM Tell-Tale modes. In "Normal" Tell-Tale mode the display shows the maximum RPM and can be reset by pressing the button on the side. In "Auto" Tell-Tale mode, above a selectable RPM the display shows the maximum RPM. Below the selected RPM the display shows the current RPM.

## Maximum RPM Recall

To recall the maximum RPM press the button on the side of the unit and keep pressed until '**rEC**' (for recall) is displayed, then release the button. The maximum RPM will then be displayed on the LCD.

The Maximum RPM is retained in memory when power is removed. The old Maximum RPM is cleared when the engine is started again.

## Setting Up

Setting up is very simple and achieved via the single button on the left hand side of the display. To setup proceed as follows:-

- 1, Press and hold in the button until '**SEt**' is displayed, then release the button. (Note that the display will first display '**rEC**').
- 2, Next press and hold in the button again. The display will scroll through the setup parameters, displaying the parameter name first and then the parameter value.
- 3, Release the button when the parameter you wish to change is displayed.
- 4, Press and hold in the button. The parameter value will increase in steps.
- 5, Release the button when the required value is displayed. The new value will then be saved in memory.

The parameters in the order in which they are displayed are:-

- 'bri' - LED Brightness
- 't. t.' - RPM Tell-Tale Mode (Off, On or Auto)
- 't.t.r.' - Auto Tell-Tale Mode Reset RPM
- 'LEd1' - The RPM at which the first of 8 LED's is illuminated.
- 'StEP' - The increment at which subsequent LED's are illuminated.
- 'CYL' - Number of cylinders

## LED Brightness

The brightness of the LED's can be set to either 'Hi' or 'Lo' for day or night time conditions.

## Tell-Tale Mode

The display can be set to one of three modes:-

**Off** - When set to 'Off' the display shows the current RPM and the tachometer operates as a normal digital tachometer.

**On** - When set to 'On' the display shows the maximum RPM achieved since the tachometer was powered up. To reset the RPM momentarily press the button on the side of the unit.

**Auto** - When set to 'Auto' the display shows the maximum RPM only when above a pre-set RPM. When below the selected RPM the tachometer displays the RPM as normal. When the RPM falls below this preset RPM the maximum RPM remains on the display for 2 seconds to allow the driver time to read it. If using the feature to read the maximum RPM at the end of a straight, it is important not to downshift to slow the car down. If this is done, the maximum RPM recorded may be due to the down change and not the maximum RPM achieved on full throttle.

In "ON", "Off" and "Auto" Tell-Tale modes the shift-light LEDs operate as normal.

## Auto Tell-Tale Mode Reset RPM

When in Auto Tell-Tale Mode this RPM is the value above which the display shows the maximum RPM. Below this, the display shows the current RPM. This value can be set from 2,000 RPM to 9,000 RPM in increments of 100 RPM.

## RPM LED's

The 8 LED's can be programmed to start and stop within any rev band. This is done by setting the RPM that the first LED comes on and setting the increment (StEP) between subsequent LED's. The first LED can be programmed to come on between 3,000 RPM and 14,000 RPM in increments of 100 RPM. The size of the step between LED's can be selected between 50 RPM and 800 RPM in increments of 50 RPM.

As there are 8 LED's (i.e. 7 increments between LED's) the RPM at which the last LED will be illuminated will be "LEd1 + 7 x StEP".

## Configuring for Different Engines

The instrument will operate on most 4 stroke engines with a normal inductive ignition coil and 1,2,4,5,6 or 8 cylinders. Set the “**CYL**” parameter to the correct number of cylinders.

On engines with more than one ignition coil or engines that operate a wasted spark system, the number of cylinders set may be different to the actual number of cylinders on the vehicle.

## INSTALLATION

Wiring in the instrument is very simple. However, care must be taken with any electronic equipment and all connections should be of a high standard.

**BROWN** + 12 volts Supply

**GREEN** Earth (0v)

**BLUE** -Ve terminal on Ignition Coil

On engines with multiple ignition coils connect the blue wire to just one of the ignition coils. The number of cylinder should normally be set to half the actual number of cylinders. No damage will result to either the tachometer or ignition system if connected to the wrong wire of the coil.

**It is recommended that the +12 volts and earth are not taken directly from the ignition coil as this could introduce an unacceptable quantity of electrical interference.**