

## Tachometer/RPM II.

**This is an improved version of the Tachometer created specially to measure up to 9,999 RPM. Uses a PIC 16F628. (04/24/2006)**

Please remember to visit my [Garage Sale](#), I have some items for sale.

[http://www.josepino.com/pic\\_projects/index?tachometer2.jpg](http://www.josepino.com/pic_projects/index?tachometer2.jpg)



**En Español!**, click [AQUI](#) para la version en Español.

PIC: 16F628

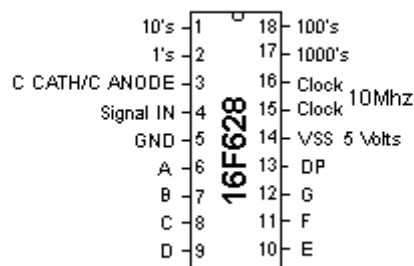
CONFIG: XT osc, PWRT ON, MCRL OFF, BODEN OFF, WD OFF

As many people was asking for another version of the tachometer to measure up to 9,999 revolutions per minute (RPM), I decided to create an improved version specially used for automoviles or any other machine that can't reach more than 9,999 RPM.

The original version was created to measure the RPM of electrical motors with high accuracy with a range between 60 to 99,990 RPM. This improved version measures between 200 to 9,999 RPM with a 0.3% of accuracy. I do not recommend to use this project for critical applications. Please read the disclaimer at the main page.

The schematic and the pinout information is exactly the same for compatibility reasons. The only change is the HEX code. Here is the pinout information:

### JP6283 - DIGITAL TACHOMETER / RPM



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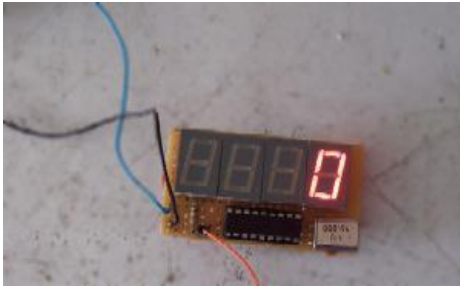
Pin 3 defines the Display type: Common Cathode or Common Anode. Connect this pin to GROUND if you are using common cathode 7-segment led displays. To use common anode displays, connect it to VCC (positive)

Pin 4 is the signal input, you can use optical sensors (Fototransistors, fotoresistors, etc), magnetic sensors (Hall effect, reed switch, etc) or using a switch.

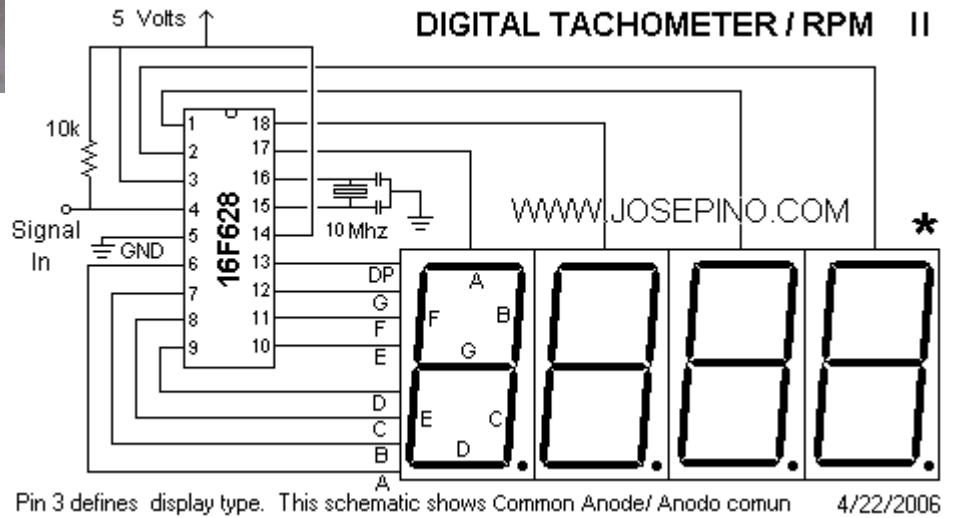
Unfortunately, I have no idea how to connect this circuit to a vehicle. If you want to share details about how to attach this circuit to an automovile, I will post this information.

**DO NOT CONNECT ANY SIGNAL DIRECTLY TO PIN 4.** High voltages can damage the PIC. If the input signal is more than 5 Volts, Use a driver as TTL, CMOS, Amp Operational or Transistors.

The RPM are displayed as units, that means, the RPM indicated in the display is the actual reading from the input pin. This version have a faster sample rate so the reading



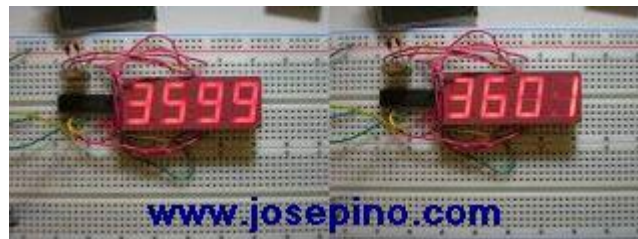
is constantly updated, you get a faster reading than the previous version. The schematic is the same.



Download the HEX code [HERE](#) Right click and "save as..."

NOTE: Use only 10Mhz xtal and 22pf or 33pf capacitors.

Here is a picture of the prototype during testing and calibration The input signal was 3,600 RPM. Please note red displays works better than green or the yellow ones.



Do you want to know how this tachometer works? [Here is the algorithm.](#)

**Photos sent by readers:**

Francisco Arroyo Garcia sent this photo of his tachometer, a very compact design.