

## TachMatch Model TM-02-I-Drive Instructions

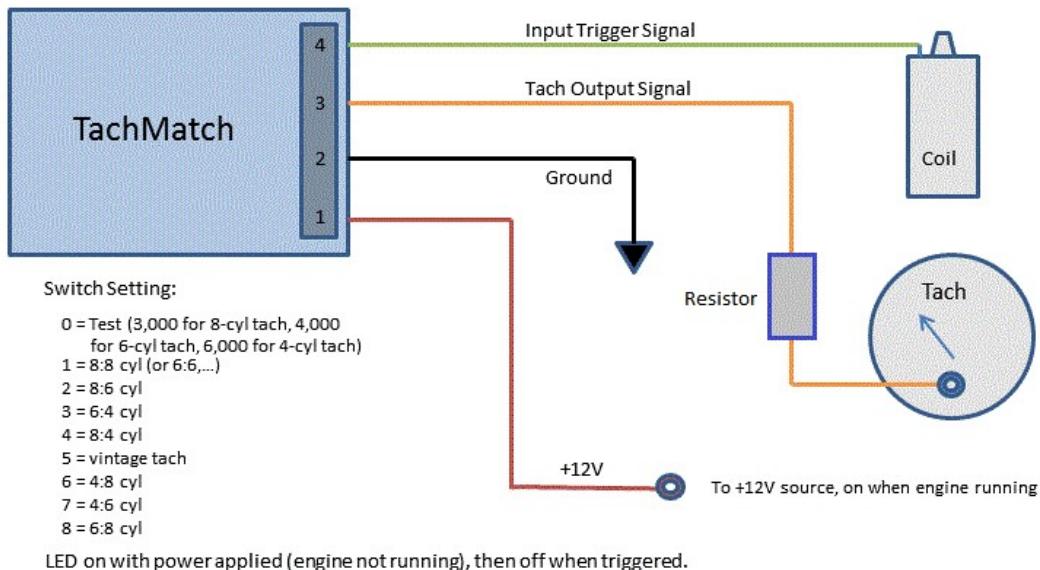
Thank you for your purchase of the TachMatch TM-02-I-Drive from TechnoVersions LLC. The TachMatch has been designed to:

- accept various tachometer input signals (e.g., coil, MSD, HEI),
- conversion of the signal from the engine to match a tachometer expecting a different number of cylinders
- drive tachometers that are current-driven, rather than the more typical voltage-driven units

There are only four wires to connect, a resistor to mount, and a switch to set before your TachMatch will be making your vehicle's tachometer accurately reflect the RPMs of the engine.

*Note: If you are having trouble reading the small print of this instruction manual, go to the TechnoVersions website and open the on-line copy – it can be printed out in full size if you desire.*

### QuickStart Overview



## Installation and Wiring the TachMatch and Power Resistor

The first installation step is to physically locate the TachMatch. It should be located inside the car (best), or if in the engine compartment, away from moisture and hot items such as the exhaust and radiator, and in a position away from dirt and water. It should not be mounted next to sources of electrical noise, such as spark plug wires.

To access the terminal strip and internal switch, use a small Phillips screwdriver to remove the screw on the back of the unit, and then remove the cover. Take care that the circuit board does not touch ground or other wires during installation, doing so could damage the unit.

The power resistor that is included with the TM-02-I-Drive should be mounted to a surface in an area where it can cool. It generates heat during operation. Use the provided screws to fasten it to a panel on your vehicle which has free flowing air around it.

There are only four wires for the TachMatch module to be fully operational. The terminal strip accommodates wires from 14 AWG to 22 AWG. The power and trigger signals may be connected with wire on the smaller side of the spectrum if desired, but the tach output signal (with the resistor) and ground should be connected with 16 AWG or larger. It's a good idea to use different color wires on each pin to prevent confusion while wiring, the diagram on the previous page shows typical colors that could be used. Strip approximately  $\frac{1}{4}$ " –  $\frac{5}{16}$ " of insulation from the wires for connection to the terminal strip.

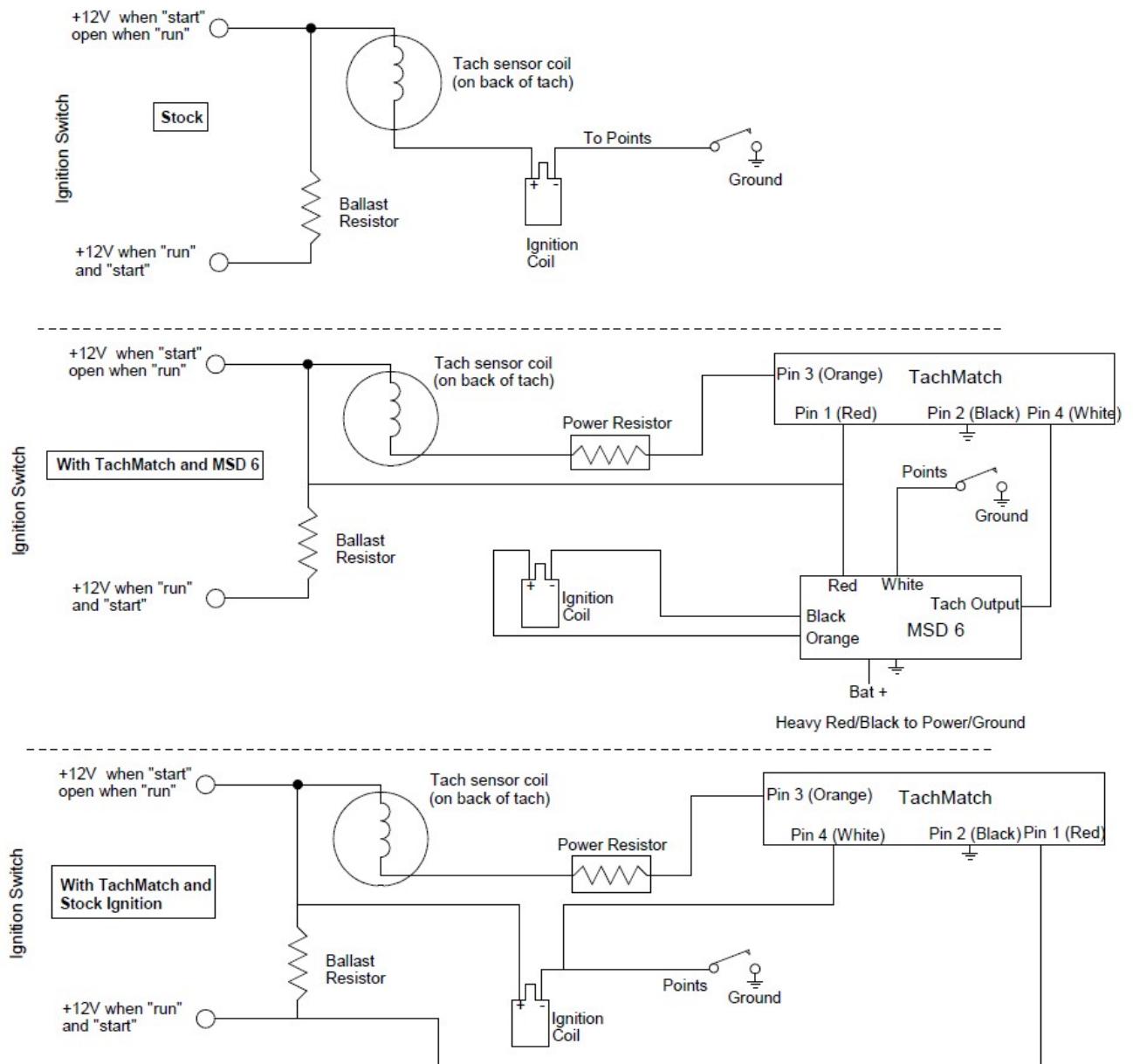
| Pin | Use                | Connection  |
|-----|--------------------|---|
| 1   | Switched +12 V     | This is power to the TachMatch. It should be connected to a source of +12V when the vehicle ignition switch is turned on, and with no voltage if the vehicle is turned off. It only requires a few mA of current so can be added to typical power circuits without changing the existing fuse of the circuit.   |
| 2   | Ground             | This wire should be connected to a well-grounded surface. The ground wire is important for the TachMatch to work properly.  |
| 3   | Tach output        | This is the wire that connects to the tachometer. The orange, 16 AWG wire with the power resistor is installed between this TachMatch terminal and the tachometer.  |
| 4   | Tach trigger input | <p>This wire tells the TachMatch how fast the motor is turning. It can be connected to one of several types of inputs.</p> <ol style="list-style-type: none"><li>(1) If you are using an HEI distributor, it is connected to the Tach output on the distributor.</li><li>(2) If you are using a standard points-style ignition, it should be connected to the terminal on the coil that goes to the points or electronic module (usually marked "-").</li><li>(3) If you are using a multiple-spark or boosted ignition such as an MSD unit – DO NOT connect the TachMatch to the coil. It will not work because of the multiple spark signals, and is likely to damage the TachMatch because of the high voltages present. For these types of ignition systems, connect to their tachometer output signal.</li></ol> |

## Connection Diagrams

The following diagram shows how the TachMatch is connected. The top shows a typical ignition system without the TachMatch. The middle diagram shows connection of the TachMatch if you are using an MSD ignition (or similar with tachometer output terminal), and the bottom shows connection of the TachMatch to a standard ignition system without an MSD unit.

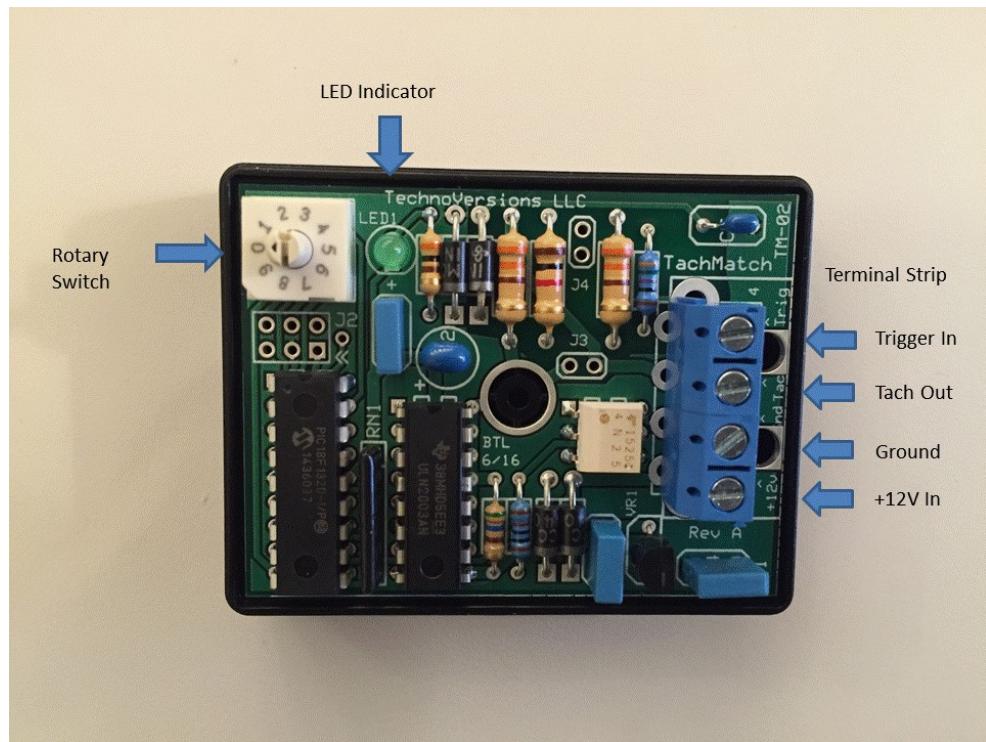
Note that in most cases, you do not need to be concerned about changing the wire providing power to one side of the tachometer (as show at the top of the tachometers in the pictures below), it is already wired properly for use with the TachMatch.

**TachMatch Ignition Wiring, Current-Driven Tachometer**



## Setting the Cylinder Switch

Inside the unit, you will find a rotary switch and a small LED. The switch has a small pointer (a black triangle). You will feel the switch click into a detent as it reaches each position.



Set the rotary switch as follows:

| Switch Setting | Ratio                | Engine has this many cylinders | Tach expects this many cylinders |
|----------------|----------------------|--------------------------------|----------------------------------|
| 0              | Test mode            | N/A                            | N/A                              |
| 1              | 1:1                  | 2/4/6/8                        | same                             |
| 2              | 8:6                  | 8                              | 6                                |
| 3              | 6:4                  | 6                              | 4                                |
| 4              | 8:4                  | 8                              | 4                                |
| 5              | Analog vintage tach* | N/A                            | N/A                              |
| 6              | 4:8                  | 4                              | 8                                |
| 7              | 4:6                  | 4                              | 6                                |
| 8              | 6:8                  | 6                              | 8                                |

Note that your cylinder and tachometer count don't have to be the same as in the chart, just the same ratio. For example, switch setting 6 could also be used with a 2-cylinder engine with 4-cylinder tachometer.

\* *Vintage Tach* - this can be used with some older tachometers with analog sending units. See info on TechnoVersions website, or send email.

## **Completing the Installation**

Once TachMatch has been wired, and the internal switch set, it is almost ready for use. Install the top of the protective case so that the wires nest into the slots in the end of the top cover, and install the screw from the bottom of the unit.

You should now be able to fire up the engine and see your tach work properly!

## **In case of Problems**

If the tachometer does not work correctly, recheck your connections to ensure that they are correct and securely fastened. If it still doesn't work, TachMatch has provisions to help find out what the problem is. Try the following debugging steps:

1. With the ignition turned on, but without the engine running, you should see the TachMatch LED turned on. If it is not, the problem may be from 12V not coming into pin 1, improper ground connection to pin 2, or the TachMatch unit is faulty. This LED should light even if the tachometer input and output wires (pins 3 and 4) are not connected.
2. With the ignition turned on and the rotary switch set to the "0" (test) position, your tachometer should indicate an RPM. If your tach is calibrated for an eight cylinder motor it should read approximately 3,000 RPM, if for a six cylinder 4,000 RPM, and for a four cylinder 6,000 RPM. If your tachometer is not active, it may be due to incorrect wiring, or possibly the TachMatch is not compatible with your tachometer. When you are done with this test, set the rotary switch back to the position necessary for your number of cylinders and tachometer configuration.
3. Start the motor. The LED should go off while the motor is running. It turns off each time it senses an input pulse, so at low RPMs you will see it as a flashing LED and at high RPMs it will appear to be steadily off. If the LED stays on steady when the motor is running, TachMatch is not receiving a trigger signal from the engine. Recheck the connection to the coil, distributor or tachometer output.

Note: If your tachometer reads a steady RPM regardless of whether the engine is running, the rotary switch may not be fully engaged into one of its settings or in a position that isn't used, leaving it in test mode. Try moving the switch until you feel it "click" into the position's detent.

After going through these steps, if you are not able to make your TachMatch unit work properly, please contact us via email at [TachMatch@aol.com](mailto:TachMatch@aol.com) for support.

## **Return Policy**

If a TachMatch unit does not work properly in your application, and is not damaged, TechnoVersions will allow return for full refund of purchase cost, exclusive of any shipping charges. Claim for such must occur within 30 days of product shipment from TechnoVersions. Ship the unit back to TechnoVersions along with a completed *Repair/Return/Feedback Form* and proof of purchase (showing purchase date). TechnoVersions will remit the refund via PayPal, US Mail or Credit Card refund (at TechnoVersions discretion) within 10 working days of product receipt.

## **Limited Warranty**

TechnoVersions LLC provides a limited warranty for TachMatch. If a unit should fail within 180 days from time of shipment from TechnoVersions, it can be returned for repair or replacement at TechnoVersions discretion. Products subject to abuse (as determined by TechnoVersions) are excluded from this limited warranty. TechnoVersions LLC makes no other claims as to suitability and excludes any indirect or consequential damages. Exclusive remedy is limited to product replacement or repair. Cost of shipping the product to TechnoVersions is at the customer's expense, but the replacement/repaired TachMatch will be shipped to the customer via USPS or UPS ground at TechnoVersions expense, except for shipments out of the US, in which case shipping costs are limited to that of domestic shipments. Please include a completed *Repair/Return/Feedback Form* with product and proof of purchase showing purchase date.

| <b>TachMatch Repair/Return/Feedback Form</b>                      |   |                     |
|---|---|---------------------|
| Customer Info   | Name  |                     |
|   | Address   |                     |
|   | City / State / Zip  |                     |
|   | eMail   |                     |
|   | Phone   |                     |
| Application   | Engine Make/Type/Yr   |                     |
|   | Ignition Make/Type  |                     |
|   | Vehicle Type/ Make/Yr   |                     |
| Problem Description or Feedback                                   |   |                     |
| Does LED come on when ignition is turned on (engine not running)? | Yes <input type="checkbox"/> No <input type="checkbox"/>  |                     |
| Does LED go out when engine is running?                           | Yes <input type="checkbox"/> No <input type="checkbox"/>  |                     |
| Does tach work with TachMatch in test position?                   | Yes <input type="checkbox"/> No <input type="checkbox"/>  |                     |
| Requested Action  | Return <input type="checkbox"/> Repair <input type="checkbox"/> Feedback <input type="checkbox"/> Other _____ |                     |
| Return To   | Name  | TechnoVersions LLC  |
|   | Address   | 7921 Wade Road      |
|   | City / State / Zip  | Arlington, WA 98223 |
|   | eMail   | TachMatch@aol.com   |

(TachMatch-I-DriveInstructionManual – Rev 8/2016)