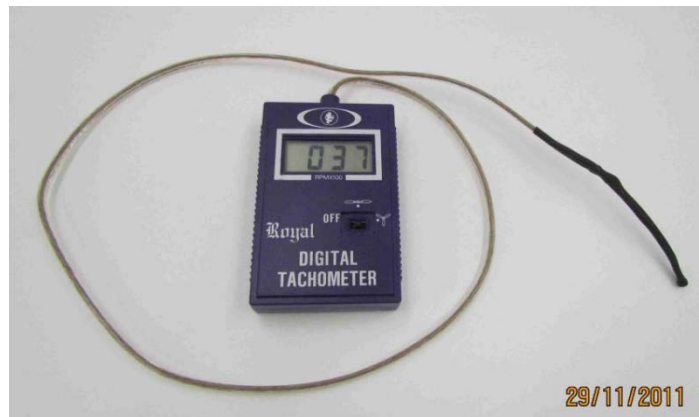


CONVERTING AN MODEL AIRPLANE ENGINE TACHOMETER FOR REMOTE SENSING

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EAA 292

Ever want an inexpensive tachometer that can remotely sense RPM? A couple years ago I built a rolling test stand to try out my CVT (variable drive ratio pulley as used in snowmobiles, etc.) driven prop and needed to monitor both engine and propeller RPM. Like most projects I'm trying not to raise the national debt buying parts for it. Having been involved in model airplanes for a long time I had an optical tachometer on hand and decided to try moving the sensor to the end of a 3 foot extension. The first attempt is shown below:



Converted Royal Tach reading my 60 htz shop lights

Although it worked fine, this was a 15 year old, three digit tach and I wanted something a bit more precise than the three digit format. Three Turnigy tachs were ordered for a total cost of about \$30. They are much smaller, display four digits and will read anything between 2 and 9 bladed props.



Turnigy Tach reading my shop lights more accurately

Steps to add an extension:

1. Disassemble the unit. (Photo A)
2. Cut the sensor wires and tin the ends of your extension. I have not experimented with the maximum extension length. Mine are about 3 feet long and seem to work fine. (Photo B)
3. Solder the sensor to the extension and the extension to the printed circuit board where you cut off the sensor. Use the smallest soldering iron possible. Excess heat will fry the sensor. I know because I have one dead sensor. Clever of me to order three units. Use heat shrink tubing on the sensor wires. (Photo C)
4. Attach the lens housing using heat shrink tubing and assemble the unit using a small dab of a vinyl adhesive like GOOP or E-6000 vinyl adhesive to stabilize the extension wire where it exits the Tach housing. (Photo D)
5. You now have a very useable remote reading tachometer that you can mount on your instrument panel.

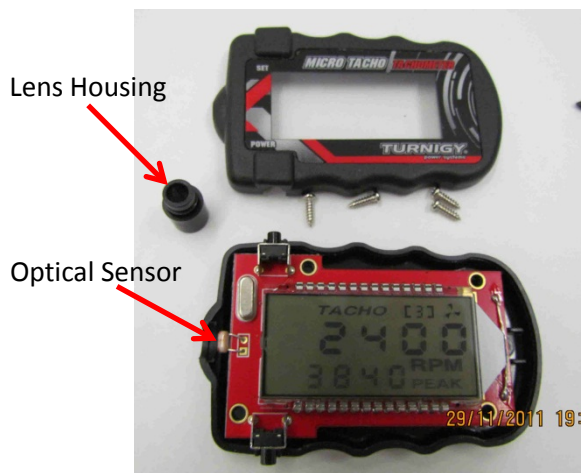


Photo A

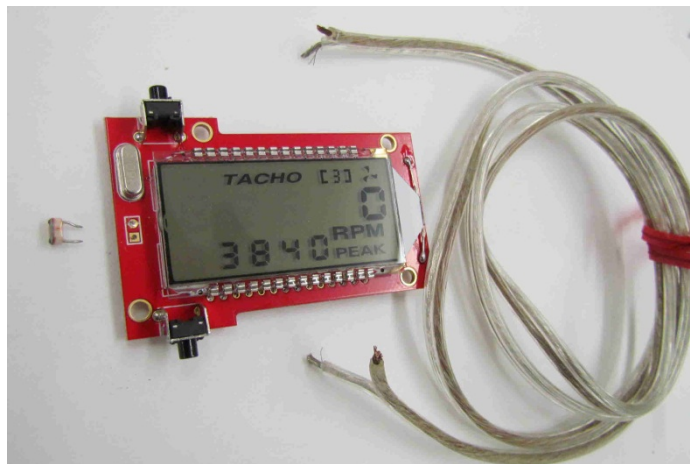


Photo B



Photo C

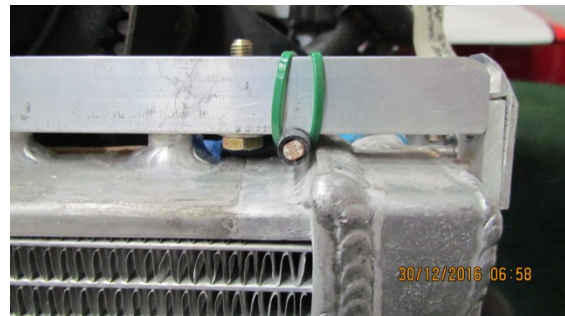


Photo D

I am currently building a Himax with a Raven Redrive Geo metro engine and have one of these converted tachometers as a backup. The tach is mounted on the instrument panel with Velcro so the battery can be replaced. The sensor is mounted looking at the prop through the radiator air inlet screen. I promise to more permanently mount the sensor before first flight.



Tach Mounted on Panel with Velcro



Sensor mounting for Ground Testing