

Digital Scalewinder

This is a rewrite with modifications by your friendly PFFT editor of an article by Bob Marchese published in the Nov/Dec Issue of the Flying Aces Club Newsletter, Lin Reichel, Editor

One thing I have noticed since I started flying at public venues such as the National Building Museum is that I can't count to 100 while holding a conversation. I hate to appear antisocial, even to people that don't know rubber power etiquette, so I built this counter for my HiLine Scalewinder. All the components are nicely hidden inside the original winder.

Like many others, it counts the cranks rather than actual turns. But this is no problem with a 10:1 winder. The magnet mounted on the large gear closes the reed relay when it passes by. This provides a contact closure for the counter module. Its up to the operator's "wet-ware" to provide the times 10 function.

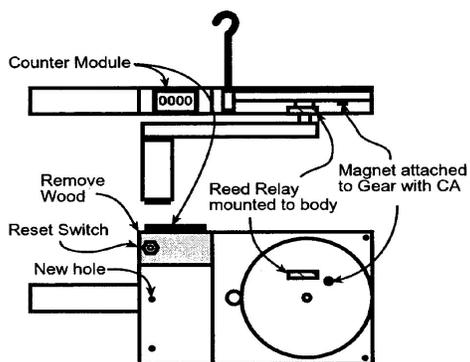
Here is a list of parts you'll need. All except the counter module are available from Radio Shack.

—Trumeter 7010 Totalizing Counter Module

—Reed Relay (RS Part # 275-233)

—Momentary Switch (RS Part # 275-1571) —Magnet (RS — Magnet (RS Part # 64-1895 or any small "rare earth" magnet — the 1/4X1/16 Wonder Magnet at left would work at less cost) (Editor's note: the total list price of the Radio Shack items is \$7.17)

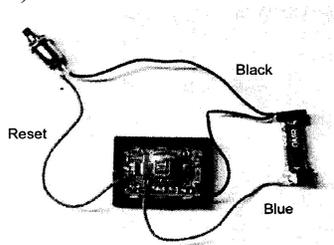
The Counter Module is the heart of this project. Originally they were available from Radio Shack too, but they have stopped carrying them. The good news is you can get the new improved models directly from the manufacturer: <http://www.trumeter.com> (search for "7010 Totalising") or contact their US distributor at 1-954-725-6699. (Editor's note: The bean counters are at work at Trumeter and will tell you that they have a \$50 minimum order. Ask to speak to Jorge Labendz. He will ship you a single unit for \$10.)



The sketch above shows how I put mine together. Starting with one of Dave Reese's lovely Scalewinder, drill a 1/8" hole through the two metal plates and the handle 3/4" below the upper screw. Then remove the two screws holding the handle on. Save the screws and metal

spacers. Cut about 3/4" off the upper part of the handle to provide clearance for the counter module. Then drill a 1/4" hole in the handle using the small hole as a pilot. (Ed note: Don't try this without a drill press to ensure the holes are drilled 90° from the metal plates or you'll never get the screws back into the spacers.)

The photo below shows how to wire up the components. The blue and black leads go to the terminals on the ends of the reed relay (the blue lead goes to the thick cap on the terminal). Use only the two pins at the extreme end of the relay — ignore the pair below one end. You also need to solder a wire from the reset pin (shown on the counter's data sheet) to one side of the momentary switch. The other side goes to the ground wire (black) on the reed relay, and the two contact closure wires to the contact pins on the relay. (Ed note: These wires will not take much moving around without breaking off in the tiny holes in the counter circuit board — ask me how I know!)



Use CA to attach the magnet to the large gear at about the mid-point on the diameter. Use Ambroid to **temporarily** attach the relay to the side plate. You'll probably have to move it a couple of times to ensure you get good counts, and it's easy to pry loose from Ambroid. Once you get good counts (depending on location you may get missed counts or double counts), epoxy the relay in without moving it. The last thing you want is to miss counts during the heat of a mass launch windup!

Finally, reassemble and make sure the gears still turn freely while counting consistently. The Counter Module's bezel is too wide to fit in between the two plates, so I trimmed a little off one side before sliding it in. (Ed note: Mine was too wide to do that, so I mounted it with the counter screen at an angle facing me as I wound, and protected it by trimming a piece of the wood cut from the handle. I used E6000 Medium Viscosity Clear glue, which can be dissolved with mineral spirits to hold the counter. Don't glue it in permanently because you may have to change the battery some day. The manufacturer claims it will last about 4 years. One of the original screw holes was used after widening to 7/32" dia. for the reset switch That's all there is to it.

