

# Re: Source Sealed Potentiometers?

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*Source:* <http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2006-10/msg00466.html>

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- *From:* "Robert Adsett" <[sub2@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:sub2@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* 9 Oct 2006 12:15:19 -0700
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Frnak McKenney wrote:

The documents mentioned in the other thread:

<http://www.taosinc.com/downloads/pdf/encoderdesign4b.pdf>  
<http://www.taosinc.com/downloads/pdf/IOSDN1.pdf>

describe a somewhat<grin!> less sensor-hungry approach to using a single-track encoder pattern to determine absolute position, in their case to 1/4096 of a full turn (0.088 degrees). They use a single sensor (really, 128 photodiodes in a single package) with a single-track 256-element pattern to accomplish this; I'm on my third reading, and it's starting to make sense.

I'm also having trouble translating the "tracked" approach out of the optical domain and into the magnetic... um, "field" (oooog!) to satisfy the OP's concerns regarding outdoor use. It's not that I think that this translation couldn't be done, it's that I get stuck at the part where I picture my rather clumsy fingers trying (for the third time) to glue 256 magnets of two different widths around the circumference of the OP's platform in the correct pattern.

Hm. What if I wrapped one flexible magnetic strip around the platform's rim and then covered it with a carefully punched strip of metal? Will enough of the strip's magnetic field get through so that a linear Hall Effect sensor can tell the difference between a narrow and a wide slit? I suspect I can print-and-paste-and-punch a pattern more reliably than I can glue individual itsy-bitsy magnets... I need to think about this.

Reverse the set up a bit, put the magnet on the sensor and just leave the punched pattern on the table. That's essentially how gear tooth detecting hall sensors work, at least some of them incorporate the magnet into the sensor assembly. Building an array of them to achieve the desired resolution I'll leave to you ;)

Re: Source Sealed Potentiometers?

Robert

Anyway, if I misunderstood your comment, I apologize. Please give it another "whack".

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"We don't just borrow words; on occasion, English has pursued other languages down alleyways to beat them unconscious and riffle their pockets for new vocabulary." — James D. Nicoll  
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