

## A low-end digital compass

We have looked at some solid-state digital fluxgate compasses in previous columns. They are probably the best way to electronically measure a magnetic heading. Important uses of fluxgate sensors are for cave mapping, navigation, for car compasses, and for satellite-dish pointing.

I've recently found a cheaper and simpler method for electronic sensing of a magnetic heading. It is also considerably less accurate than a fluxgate and, being a moving mechanical device, has all of your typical compass damping and hunting problems.

This is the *Dinsmore digital compass sensor*. It is available for \$10 in hacker quantities, and much less in production quantities. The sensor consists of four hall-effect transistors facing each other and a moving central magnet on a carefully damped pivot. The maximum theoretical resolution is plus or minus 22.5 degrees. The intended market is for low-end auto and bike compasses, but there should be plenty of other low-end robotic and toy uses.

A simple four-LED display is

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Dinsmore instrument  
1814 Remond St.  
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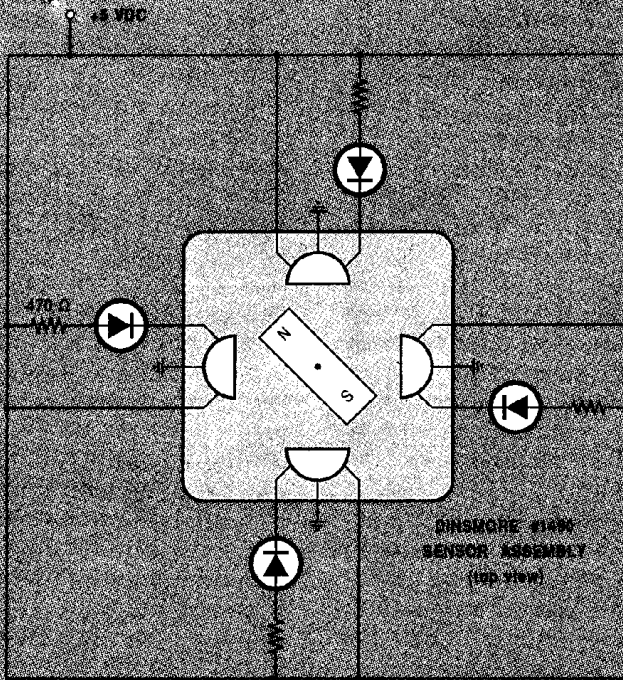


FIG. 5—LOW-END DIGITAL COMPASS is cheaper than a fluxgate but has a very poor resolution. Hall-effect sensors are used to drive the LED outputs as shown here. Eight-point LCD compass rose displays are also possible.

shown in Fig. 5. A liquid-crystal display showing N, NE, E, SE, S, SW, W, and NW is also available. It uses the same sensor in a slightly more complex circuit.

For our fourth contest, just show me some new or unusual use for a low-accuracy but very cheap digital compass.