NVE NVE CORPORATION

Sensor and Isolator NEWS

August 2016 *Electrifying News From NVE*

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TMR Patent

NVE was recently granted U.S. patent number 9,322,889 titled "Low Hysteresis High Sensitivity Magnetic Field Sensor" related to TMR sensors.

See story at right for more information about one of our state-of-the-art TMR products.

Document Updates

Short-form Sensor Catalog

(added AAT009 Ridiculously Low-Power Angle Sensor)

New YouTube Videos

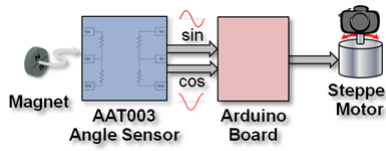
- AAT003 Angle Sensor and Arduino Controlling Camera Rotation
- Ridiculously Low-Power Angle Sensor Powered by a Blueberry
- Interfacing Angle Sensors to Microcontrollers

Application Corner

Angle Sensor Interfaces

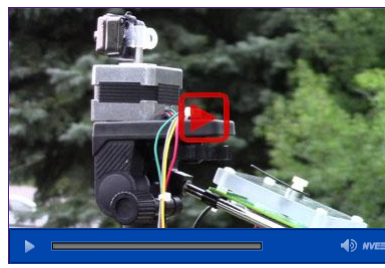
AAT sensors measure angular position based on rotating magnetic fields. With their large output signal and low output impedance, AAT003 angle sensors easy interface directly to Arduino and similar boards with integrated Analog-to-Digital Convertors.

This reference design uses an Atmel MEGA328 on an Arduino board:



The Arduino reads the sensor, calculates the angle, and drives the stepper motor. Because of the large sensor output, no amplification is needed prior to the Arduinio.

To demonstrate, we control a stepper motor servo to rotate a micro video camera, and use the video frames for an updated picture of our building:



The demonstration uses an off-the-shelf AAT003 Evaluation Board, which includes a sensor and magnet. For the demo, we mounted an Arduino board and a stepper motor shield mounted on the back.

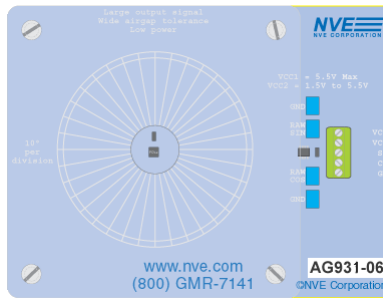
A simple program reads the two sensor analog outputs and calculates the indicated angle using a two-variable arctangent:

[click to enlarge]

Key AAT003 features include:

- 0.5° maximum angular measurement error
- Sine and cosine outputs
- 200 mV/V peak-to-peak output signals
- 40 kΩ typical device resistance; 20 kΩ output impedance
- Wide magnet airgap tolerance
- Ultraminiature 2.5 mm x 2.5 mm x 0.8 mm TDFN6

Sensors, magnets, and evaluation boards are in stock and available for immediate delivery.



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