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TMR Rotational / Linear Sensors

NVE has launched the new AET-Series of TMR off-axis rotational / linear sensors, the world's only tunneling magnetoresistance (TMR) encoder sensors.



Versatile

The sensors can be used with multipole ring magnets as rotary encoders or with magnetic linear scale tape as linear motion sensors. High sensitivity allows for wide airgaps and accommodates mechanical tolerances.

Simple Interfaces

AETxxx half-bridge versions offer simplicity and miniaturization. AETxxxF full-bridge versions provide twice the output signal and maximize noise immunity. Sine and cosine outputs provide direction information. The output amplitude is 200 mVpp/V typ. for half-bridge versions and 400 mVpp/V for full-bridge versions. The large output signals allow direct interface to common microcontrollers with no amplification.

Ridiculous Precision

Standard AET-Series sensors are designed for pole pitches from 0.5 to 5 mm. Custom spacings are also available. Typical resolution is one one-thousandth of the pole pitch, or as little as 0.5 microns for linear motion sensing and 0.02 degrees for rotation sensing with a 16-pole ring magnet.

Key AET-Series sensor **features** include:

- Large analog signals (to 400 mVpp/V)
- Excellent linearity and low distortion
- 350 kHz operating frequency
- 150°C operating temperature

AET-Series **applications** include:

- Rotary encoders
- Linear motion sensors
- Motion, speed, and position sensing
- Closed-loop servos
- Automotive sensors

In Stock

Five AET-Series models are [in stock](#) for immediate delivery:

Part Number	Bridge Configuration	Pole Pitch	Package
AET500-02E	Half bridge	5 mm	SOIC8
AET050F-00E	Full bridge	0.5 mm	MSOP8
AET075F-00E	Full bridge	0.75 mm	MSOP8
AET100F-00E	Full bridge	1 mm	MSOP8
AET120F-00E	Full bridge	1.2 mm	MSOP8

Demonstration and Evaluation Kits

The [AG965-07E Demonstration Kit](#) showcases micron precision with an AET500-02E sensor.

The kit includes:

- A 3 x 5-inch PCB
- An AET500-02E 5 mm pole-pitch sensor
- On-board amplifier and microcontroller
- A four-digit position display
- 5 mm pole-pitch magnetic tape
- 3-D printed fixturing
- LEDs to indicate pole detection
- Powered by three AAA batteries (included)



The [AG970-07E Evaluation Kit](#) helps test AET-Series sensors with magnetic linear scale tape. The kit includes:

- All five AET-Series parts (unsoldered in tubes)
- A 3 x 4-inch PCB with test points and screw terminals
- Detachable fixturing for magnetic linear scale tape (tape sold separately)



Resources

[Datasheet »](#)

[Demonstration Video »](#)

Buy Online
\$9.95 shipping

Upcoming Exhibitions



Conference on Magnetism and Magnetic Materials
(virtual conference)
November 2 to 6, 2020.



Sensors
Expo & Conference

Sensors Expo
November 16 to 18, 2020
San Jose, Calif.
CANCELED

