

**In This Issue**

[Year in Review](#)

[High-Field TMR Magnetic Switches](#)

[4 mT GMR Smart Magnetometer](#)

**Quick Links**

[Sensor Selector Guide](#)

[Isolator Selector Guide](#)

[Online Store](#)

[Contact Us](#)

[Twitter](#)

[YouTube](#)

**New on YouTube**

[The AHK991 High-Field TMR Switch for Security](#)

[ADT-Series 3 V TMR Switches](#)

[AHT-Series 1.5 V TMR Switches](#)

**In the News**

NVE is highlighted in a recent article in *Elektronik International* titled, "[Bye-Bye Optocoupler](#)."

[German](#)  
[English](#)

An excerpt:  
"Optocouplers are no longer fast enough for today's data technology. So what are the alternatives?" (spoiler alert: they're made by NVE).

**New Catalogs**

Our popular Sensor and Isolator catalogs have been updated with a number of new products:



[Download Sensor catalog »](#)



[Download Isolator catalog »](#)

**Year in Review**

**2019** new product highlights included:

**Smart GMR Magnetometers**

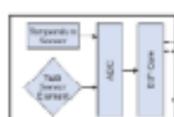
SM12x magnetometers are versatile sensors with omnipolar GMR sensor elements, sophisticated digital signal processing, an I2C interface, and a programmable threshold output.



The SM124 has a 1 mT linear range and the SM125 has a 4 mT linear range. Like all of our smart sensors, it is factory calibrated and comes in an ultraminiature 2.5 x 2.5 mm DFN.

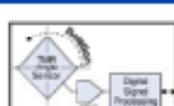
**Smart TMR Magnetometer**

The SM225-10E Smart Magnetometer has a TMR sensor element to provide a wide -15 to 15 mT linear range and a fast 15 kSps update rate via an SPI interface. It is ideal for noncontact current sensing.



**Smart Angle Sensor**

The ASR002-10E is the world's first Smart TMR Angle Sensor, providing an extraordinary combination of speed and precision.



**Nanopower TMR Magnetic Switches**

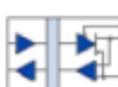
The [1.5-volt AHT-Series](#), [3-volt ADT-Series](#), and [high-field AHT991](#) magnetic switches are nanopower, high speed, and ultraminiature.



They are ideal for battery-powered applications, and their continuous operation without duty cycling means a virtually instantaneous response.

**CAN FD Isolated Transceivers**

NVE's popular line of isolated CAN transceivers was expanded to include CAN FD, which has up to five times the data rate of standard CAN.

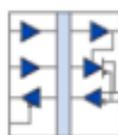


Like all of our isolated transceivers, the new CAN FD transceivers are available in NVE's unique QSOP16 package, which is the world's smallest isolated transceiver, as well as narrow and wide SOIC16s.

Our unique polymer/ceramic composite barrier provides best-in-class barrier resistance and virtually unlimited barrier life.

**Isolated Transceiver for 3V RS-485**

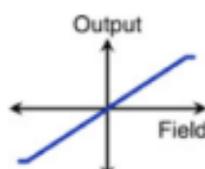
We expanded our popular line of isolated transceivers with the IL3685P, designed to work with next-generation RS-485 buses.



The new IL3685P is compatible with 3.3V buses, has 1/5 Unit Loading to support up to 160 nodes, and 16.5 kV bus ESD protection. It's perfect for industrial control networks and DC-DC converter-powered buses.

**TMR Bipolar Analog Magnetic Sensor**

Ideal for current or proximity sensing, the new ALT005 and ALT025 are TMR analog bridge magnetometers with high 20 mV/V/mT sensitivity, 20 kilohm device resistance for low power, and a full -40 to 125 °C temperature range. The output is bipolar, meaning it is positive for a positive field and negative for an opposite field polarity.



**High-Field TMR Magnetic Switches**

The unique AHK991-14E is a high-field, low voltage, low power, Tunneling Magnetoresistance (TMR) magnetic switch.

**High Fields**

The new sensors have a 350 mT (3500 Oe) typical operate point, which is high enough to detect close-proximity rare-earth magnets. The sensors can withstand unlimited fields without being damaged or turning off.

**Omni-directional**

The digital output turns on and off as field intensity varies. Unlike Hall effect or other sensors, the switch is sensitive to magnetic fields in any direction, so multiple sensors are not needed for orthogonal or unknown directions of applied fields.

**Low Voltage**

AHK991 sensors operate as low as 0.9 volts, so they can be powered by single-cell alkaline batteries.

**Low Power**

TMR technology provides ultralow power. Typical AHK991 quiescent supply current is just 2 microamps, even with no duty cycling. That's less than the self-discharge rate of some button cells, making the new sensors ideal for battery applications such as utility meters or portable instruments.

**Configured as Switches**

Outputs are configured as magnetic "switches," turning on when a magnetic field is applied and off when the field is removed. The magnetic operate point is extremely stable over supply voltage and temperature.

**Speed**

Continuous operation without duty cycling means the sensors can switch at 3000 Hz.

**Ultraminiature**

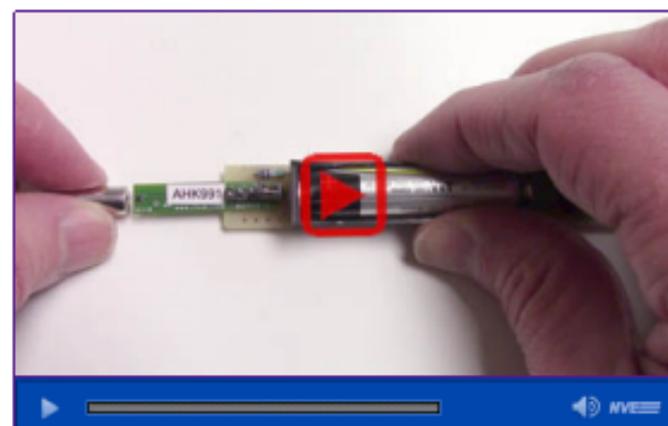
AHK991 sensors come in ultraminiature 1.1 x 1.1 x 0.35 mm ULLGA-4 packages.

**Key Specifications**

- 350 mT operate point
- 0.9 to 1.8 V
- 2 µA typical supply current
- 3000 Hz switching speed
- -40 to 85°C



Here's a demonstration:



[Download the AHK Datasheet »](#)

**Available Now**

Parts are in stock for immediate delivery:

**Buy Online**  
\$9.95 shipping

**4 mT GMR Smart Magnetometer**

NVE expanded its industry-leading line of GMR Smart Sensors with the [SM125-10E](#), a higher-field (4 mT) version of the popular SM124-10E 1 mT GMR Smart Magnetometer.

The SM124-10E and SM125-10E feature programmable threshold outputs and I2C interfaces, and have better than 1% precision.

[Demo Boards](#) are also available.

**Buy Online**  
\$9.95 shipping