

In This Issue

- [Sensors Converge Recap](#)
- [TMR Guitar Pickup](#)
- [16 mm Creepage / 12 kV Isolation](#)

Quick Links

- [Sensor Selector Guide](#)
- [Isolator Cross Reference](#)
- [Online Store](#)
- [Contact Us](#)
- [Twitter](#)
- [YouTube](#)

New on YouTube

- [TMR Guitar Sensor](#)
- [Sensors Converge](#)
- [16 mm Creepage / 12 kV Isolation](#)
- [H-Bridge Arduino Shield](#)
- [A musical demonstration of a noncontact TMR linear magnetic encoder](#)

Upcoming Trade Shows

NVE will exhibit at **MD&M** October 10-11 at the Minneapolis Convention Center. It's billed as the region's most comprehensive medical design and manufacturing event. See us at booth 3630.

Sensors Converge Recap

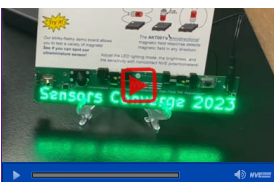
North America's Largest Electronics Event

Thanks to everyone who visited our 2023 Sensors Converge booth in Santa Clara, Calif. We had a good turnout and a successful exhibition. Sensors Converge is billed as North America's largest electronics event for design engineers. We look forward to following up on your latest and greatest designs.

Demonstrations

Hands-on demos are a popular feature at our booths. This year some were from an internal demo design contest. The winner was a "blinky-flashy" demo using several NVE [AKT001-14E](#) omnidirectional magnetic sensors.

If you couldn't make it to the show, here's a quick look at the demonstrations:



You can visit the [YouTube show video](#) for links to separate videos with technical details for the demos.

TMR Guitar Pickup

The World's Most Sensitive Magnetometers

NVE's new [ALT021-10E](#) is the world's most sensitive TMR magnetometer, with 500 mV/V/mT sensitivity and field detection as low as one-tenth of a microtesla. These sensitivity figures make the ALT021 competitive with coils, but NVE's remarkable sensors also offer a flat frequency response from DC to 100 kHz and an ultraminiature 2.5 x 2.5 x 0.8 mm package.

Guitar Pickup Demonstration

We're always seeking creative new ways to demonstrate the capabilities of our sensors, and we often get feedback from engineers and enthusiasts worldwide. Audio applications are popular requests, so we demonstrated a TMR guitar pickup with ALT021 sensors.

The sensors are so sensitive, that they can detect the metal guitar strings without any external magnets or field biasing. The small remnant magnetic fields in the ferrous strings and the deflection of earth's magnetic fields are enough to generate several hundred millivolts of signal, which is comparable to conventional single-coil guitar pickups. But unlike bulky guitar pickups, ALT021 sensors can detect DC, have a flat frequency response up to 100 kHz, and are not sensitive to 60 Hz hum interference. These features make ALT021 highly desirable as coil alternates for sensing applications.

We have to admit we prefer the sound of the single-coil pickups for guitar but stay tuned to follow future TMR guitar pickup design improvements.

Here's a **live demonstration**:



[Download the ALT021-10E datasheet »](#)

Buy Online
\$9.95 shipping

16 mm Creepage with NVE Isolators

The World's Safest, Most Reliable Isolators

NVE's isolators are known for their unique ceramic/polymer composite isolation barrier, the toughest, most reliable isolation barrier in the world. Offering up to 6000 Vrms isolation voltage and 1200 Vrms working voltage under the IEC 60747-17 (VDE 0884-17):2021-10 "gold standard," and a virtually unlimited 44000-year barrier life, NVE isolators truly are in a class of their own.

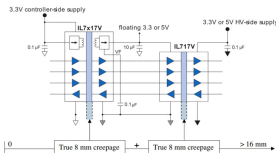
Unlike competing digital isolators, NVE isolators have True 8™ SOIC wide-body packages, the world's only JEDEC-standard SOIC16 wide-body packages with true 8 millimeter creepage, which is required for medical safety and other equipment under IEC60601.

Increasing Voltages; Increasing Creepage Requirements

The proliferation of increasingly higher voltages in e-mobility and certain medical safety applications is creating more demanding creepage requirements.

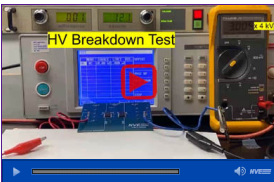
Fortunately, NVE's new [IL7000-Series Isolators](#) with Integrated DC-to-DC Converters allow a simple solution for these demanding applications. Two True 8™ millimeter creepage packages in series provide true 16 millimeter creepage.

The illustrative circuit below demonstrates 16 millimeter creepage SPI isolation using NVE's [IL7x17VE](#) and [IL717VE](#) in series. The IL7x17VE's integrated DC-to-DC converter provides a floating supply to power the controller side of the IL717VE:



Demonstration

Here's a live demonstration of the circuit:



[Download the application bulletin »](#)

[IL7000-Series Isolators »](#)

[VE-Series 6 kV Isolators »](#)

[Contact Us »](#)