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Recent Accolades

The ADL-Series ULLGA sensor (see product overview at right) was named the April **Product of the Month** by the German trade magazine *Konstruktion & Engineering*.

For the first time, NVE was ranked in the *Star Tribune* annual list of the **largest Minnesota-based publicly-traded companies**.

Constant Contact named NVE an e-mail **Marketing All Star**, citing engaging content and high readership rates.

[<Links to Accolades>](#)

In the News

The new **IL41050 Isolated CAN Transceiver** was covered in *Electronic Specifier* and *Elektronik Informationen*. The IL41050 reduces chip count and improves performance compared to discrete transceivers and optocouplers.

[<Links to Isolator News>](#)

Transition Metals

What did the cowboy do with his horse?
Rhodium


What did the gambler do with his cards?
Palladium

Voicemail Playlist

 Currently playing on our phone system background music is the theme from "Chips," the '70s TV show.

NVE is a leader in sensor and isolator chips.

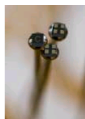
Memorial Day

 NVE will be closed for business Monday, May 31 in observance of Memorial Day.

Featured Product

Ultraminiature Magnetic Sensors

Smaller than the head of a pin, the award-winning 1.1 mm x 1.1 mm x 0.45 mm ADL-Series GMR Digital Switches are NVE's smallest packaged parts



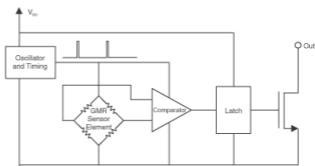
ADL-Series Sensors fit on the head of a pin.

Ideal for ultraminiature industrial controls, outputs are configured as magnetic "switches," where the output turns on when a magnetic field is applied and off when the field is removed.

The devices are omnipolar, meaning the field can be either polarity, and the magnetic operate point is extremely stable over supply voltage and temperature.

Continuously-operating versions consume about 200 microwatts.

Internally duty cycled versions consume less than a microwatt; ideal for battery-powered devices such as meters and portable instruments.



ADLxxx-14 Functional Block Diagram

Key ADL-Series specifications are:

- 1.1 mm x 1.1 mm x 0.45 mm ULLGA package
- 2.4 - 3.6 V supply voltage
- As low as 72 nW typ. power consumption at 2.4 V
- 20, 28, or 40 Oersted operate points
- Current-sinking output up to 100 μ A
- -40°C to +125°C temperature range

Because of the large number of permutations, not all part numbers are available off the shelf, so call our Sensor department at (800) GMR-7141 or e-mail sensor-info@nve.com for information or samples. You can see them (bring your magnifier) at Sensor+Test 2010 (below).

[<Learn More About NVE's Smallest Packaged Sensors>](#)

Exhibitions

Sensor+Test 2010

NVE sensors will be on display at **Sensor+Test 2010** in cooperation with NVE distributor HY-LINE Sensor-Tech. The show runs May 18 to May 20 in Nuremberg, Germany, and is one of the largest sensor shows in the world.



[<Free Registration Courtesy of HY-LINE>](#)

Application Corner

Remembering Magnets

By **Jay Brown**
Vice President, Sensors

Sometimes forgotten in sensor systems are the humble magnets. But the right magnet can make a big difference in sensor system performance, often without much cost impact. NVE stocks several [popular magnet types](#).

Magnet Configurations

Magnets can be often used to activate a magnetic sensor, as with a simple proximity sensor, or to bias a sensor where the field is deflected in proximity to ferromagnetic material. For example, [GMR Switch Sensors](#) are often activated with a magnet and [GT Gear-Tooth Sensors](#) are usually operated with a bias magnet.

Material Grades

Ceramic and Alnico magnetic materials are graded between one and eight. Grade 1 materials are non-oriented or isotropic. In general, higher grades are more fully oriented (anisotropic) and have higher field strengths. Magnet cost also tends to increase with material grade.

Materials

Ceramic (ferrite) magnets are made of strontium carbonate and iron oxide. Grade 1 have the weakest magnetic field strengths, grade 5 are inexpensive and popular with our customers, and grade 8 have good field characteristics for sensor systems and are still relatively inexpensive.

Alnico refers to aluminium-nickel-cobalt alloys. Alnico magnets have working temperatures above 1,000°F (538°C). Alnico grade 8 magnets provide a very stable field over wide temperature ranges, making them the preferred choice for high temperature application.

Rare-earth magnets (samarium-cobalt or neodymium-iron-boron) are relatively expensive and have very high field strengths. The high field strengths are generally not necessary in NVE sensor systems and may saturate sensor, resulting in no output.

Sizes and Shapes

There are almost infinite choices of magnet sizes and shapes. Some of the more common among our customers are bar magnets around 1/2 inch long and disk magnets from 1/8 to 1/4 inch in diameter.

Specialty Magnets

Split-pole disk magnets are typically used for angle sensors such as [AAT001 Angle Sensors](#), although a bar magnet can also be used. Split-pole magnets have poles on opposite sides of the diameter rather than top and bottom as with a conventional disk magnet (see figure at right).



Split-pole magnet

Ring magnets have multiple poles around the diameter and can be used for rotational or course-angle sensing. Ring magnets are common in ABS systems, for example, and can be used with GT Sensors.

[<Magnet Data Sheet \(.pdf\)>](#)

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\$9.95 shipping