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**Document Updates**

[IL800-Series Isolator Datasheet](#)

Updates includes new four-channel QSOP-16 versions, more detailed thermal specifications, and 2.5 kV isolation MSOPs.

**New Products**

[Current Sensor](#)  
(see story at right).

[QSOP Isolators](#)

**Independence Day**



NVE will be closed for the July 4 holiday.

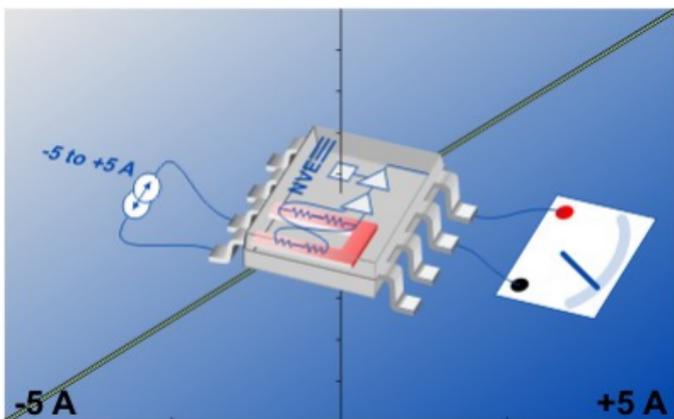
**Independence Day Bad Jokes**

Q. What did King George think of the American colonists?  
**A. He thought they were revolting.**

Q. What did one flag say to the other flag?  
**A. Nothing, it just waved.**

Q. Do they have a 4th of July in England?  
**A. Yes. That's how they get from the 3rd to the 5th.**

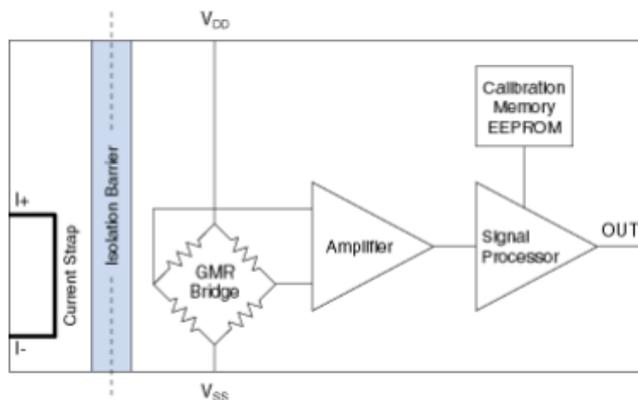
**±5 Amp Isolated Current Sensor**



Combining NVE's award-winning sensor and isolator technologies, the new AAV004-02E Isolated Current Sensor packs best-in-class performance in a SOIC8 package:

- -5 A to +5 A input range
- 0 V to 5 V linear output
- Total error <0.5%
- AC or DC
- Temperature compensated from -25°C to +85°C
- 300 WV (line voltage) per VDE 0884-10

The AAV004-02E combines a linear bipolar GMR bridge sensor with on-chip signal processing to amplify, normalize, and temperature compensate the output.



Current is fed into a current strap on one side of the package, and sensed by a GMR bridge sensor array close to the strap.

The output is a rail-to-rail analog voltage proportional to the input current and ratiometric with the supply.

An on-chip EEPROM stores factory calibration data.

Isolation is provided by a unique ceramic/polymer composite barrier with an estimated life of a remarkable 44000 years.

[Download preliminary datasheet >](#)

[Request AAV004-02E samples >](#)

**Recent Exhibitions**



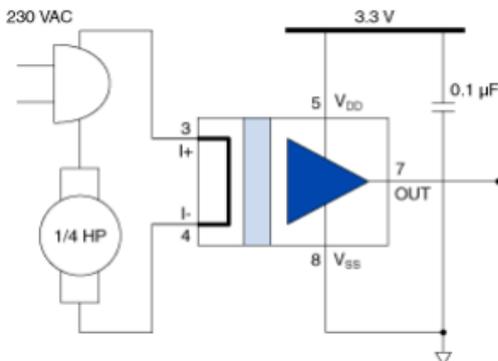
NVE sensors were on display at **Sensor+Test 2014** in Nürnberg, Germany.

New [angle sensors](#) were especially popular.

**Application Corner**

**Motor Current Sensor**

In the following typical application, the AAV004-02E is in series with line-voltage operated single-phase AC motor. The current sensor detects the AC current waveform in real time, and provides an isolated output proportional real-time motor current:



**AC Motor Current Sensor**

Full-load current for a 230 V, 1/4 horsepower motor is typically 2.9 amps RMS or 4.1 amps peak, which is within the 5 amp sensor range.

Power through the sensor shunt at full motor load is approximately 42 mW based on the 0.005 ohm typical current strap resistance. The package temperature rise from shunt heating is just 10°C based on the typical junction-to-ambient thermal resistance of 240°C/W.

Three current sensors can be used for three-phase motors, where the 5 amp range allows control of motors as large as a full horsepower at 230 volts.