

ACS754/5

High-accuracy addition to current-sensor family

- Integrated device provides small, low-cost alternative to toroid-based sensors

The ACS754/5 Series from Allegro Microsystems Europe is a new, high-accuracy addition to the company's family of Hall-effect current sensors.

These devices provide a smaller, lower-cost alternative to toroid-based sensors, and offer economical and precise current sensing in industrial, consumer, communications and automotive systems. The ACS754 devices are bi-directional sensors, while the ACS755 versions offer single-direction sensing with approximately twice the resolution of the bi-directional ACS754s.

Accuracy at 25°C is better than 1%, and the worst-case accuracy over the devices' whole measurement and temperature ranges is 5-6% in industrial applications and 7-10% in extended temperature automotive applications.

The devices provide 3 kV isolation and single voltage supply operation while placing only 100 microhms of resistance in the current path. Versions rated at 50, 100, 130, 150 and 200 A are available in both industrial and automotive temperature ranges.

The sensors are supplied in a lead-free, PC-mountable package measuring only 14 × 22 × 7 mm overall. The current path is integrated into the package, so that there is no need for the user to design the magnetic circuit or thread the conductor through the device in manufacturing.

Each sensor consists of a precision linear Hall-effect integrated circuit optimised to an internal magnetic circuit to increase device sensitivity. The combination of a precisely controlled self-aligning assembly process (patents pending) and the factory-programmed precision of the linear Hall-effect sensors results in high-level performance and product uniformity.

The power lead frames are designed for extremely low power loss, and are electrically isolated from the sensor signal leads. This isolation allows ACS754/5 sensors to be used in applications requiring electrical isolation without the addition of other isolating components.

These new current sensors are targeted to meet the needs of the industrial, consumer, communications and automotive markets with end applications including automotive EPS, motor control, battery management, UPS and emergency lighting, welding equipment, power distribution, white goods, industrial heaters and electric vehicles.
