



A1360

- Features extremely low noise levels and very high bandwidth
- Ideally suited to high-frequency automotive or industrial current sensing applications
- Provides a voltage output that is proportional to the applied magnetic field

Low-noise programmable linear Hall-effect sensors with high bandwidth

New from Allegro MicroSystems Europe, the A1360/1/2 family of programmable linear Hall-effect sensor ICs feature extremely low noise levels and very high bandwidth, making them ideally suited to high-frequency automotive or industrial current sensing applications.

The A1361/2/3 are ratiometric Hall-effect sensors, which provide a voltage output that is proportional to the applied magnetic field. Each BiCMOS monolithic circuit integrates a Hall-effect sensor element, temperature-compensating circuitry to reduce the intrinsic sensitivity drift of the Hall element, a small-signal high-gain amplifier, a clamped low-impedance output stage and a proprietary dynamic offset cancellation technique.

These new devices feature noise levels as low as 8 mV peak-to-peak and bandwidth adjustable between 100 Hz and 50 kHz. They are also the first products to use Allegro's new 1 mm thin, 4-lead, single-inline package, which allows for extremely small gaps in the concentrators (C-core style) to improve the signal/noise ratio and sensitivity.

The sensors are extremely stable over temperature variation, with quiescent voltage output and sensitivity maintained to within $\pm 0.025\%/^{\circ}\text{C}$. They also exhibit precise recoverability after temperature cycling.

The accuracy of these devices is enhanced through the programmability on the output pin of the device. A capacitor to ground on the filter pin of the A136x can be used to tune the device bandwidth over the full range from 50 kHz to less than 100 Hz.

The quiescent output voltage is user adjustable to 50% (bidirectional) or 10% (unidirectional) of the supply voltage, while output voltage clamps provide short circuit diagnostic capabilities.

Each device has a guaranteed, programmable sensitivity range: 0.7 to 1.4 mV/G (A1360), 1.5 to 4.5 mV/G (A1361) and 4.5 to 16 mV/G (A1362). Device specifications are guaranteed over the extended temperature range of -40°C to $+150^{\circ}\text{C}$.