



## Two-wire differential peak-detecting Hall sensor offers true zero-speed operation

The new ATS682LSH from Allegro MicroSystems Europe is a Hall-effect sensing integrated circuit and magnet combination that provides a flexible, easy-to-use solution for true zero-speed sensing of ferrous targets in two-wire applications.

### ATS682LSH

- A Hall-effect sensing integrated circuit and magnet combination
- Provides a flexible, easy-to-use solution for true zero-speed sensing of ferrous targets in two-wire applications.
- Is particularly suited to gear-tooth sensing in automotive applications

The new device is particularly suited to gear-tooth sensing in automotive applications - wheel-speed sensing in anti-lock braking systems, for example - and can be used in conjunction with a wide variety of gear shapes and sizes.

The ATS682LSH incorporates a dual-element Hall-effect sensor and signal-processing circuitry that switches in response to differential magnetic signals created by a ferrous target. The device contains sophisticated electronics that reduces magnet and system offsets, calibrates the gain for air-gap independent switch points, and provides true zero-speed operation.

Signal optimisation occurs at power-up through the combination of offset and gain adjustment, and is maintained throughout operation with the use of a running-mode calibration which allows immunity to environmental effects such as micro-oscillations of the sensed target at start-up or sudden air-gap changes.

The digital peak-detecting algorithm is capable of tracking harsh magnetic profiles resulting from target design and/or applications conditions such as ferrous contamination, damaged teeth or 'pot-holes'.

The regulated current output is configured for two-wire interface circuitry and is ideally suited for obtaining speed information in wheel speed applications. The Hall element spacing is optimised for use with high-resolution, small-diameter targets.

The ATS682LSH is offered in the 'SH' magnetically integrated single-step over-moulded package, which includes a samarium-cobalt magnet along with the Hall-Effect IC. It is lead (Pb) free, with 100% matt tin leadframe plating.