matronic

Programmable Hall-effect switches for gear-tooth or proximity sensing

New from Allegro MicroSystems Europe, the ATS635/636 Series of programmable back-biased Hall-effect IC sensors are true power-on state devices which use an optimised Hall-effect IC and magnet combination to switch in response to magnetic signals created by ferrous targets in automotive or industrial gear-tooth sensing and proximity applications.

These devices are externally programmable, with a wide range of programmability available on the magnetic operate point while the hysteresis remains fixed. This advanced feature allows for optimisation of the sensor switchpoint and can drastically reduce the effects of mechanical placement tolerances in production environments.

A proprietary dynamic offset cancellation technique with an internal high-frequency clock reduces the residual offset voltage, which is normally caused by device overmoulding, temperature dependencies, and thermal stress. Having the Hall element and amplifier in a single chip minimises many problems normally associated with low-level analogue signals.

The ATS635LSE switches ‘high’ in the presence of a ferrous target or tooth and ‘low’ in the presence of a target valley, window, or when the ferrous target is removed. The ATS636LSE has the opposite polarity and switches ‘low’ in the presence of a ferrous target or tooth and ‘high’ in the presence of a target valley, window, or when the ferrous target is removed.
These devices, which also incorporate robust EMC, ESD and reverse battery protection, are available in lead (Pb) free versions, with 100% matt tin lead-frame plating.