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Active speed/position sensors (Hall or GMR)



Hall effect and GMR sensors are of the active type, requiring a supply of electrical power.

They detect the magnetic field created by the passage of gear teeth or the alternating poles of a ring magnet, delivering an electrical signal that the electronic control system can process to determine the speed and/or angular position of the rotating shaft. Compared to VR sensors, these active sensors are smaller, detect lower speeds and can be used for zero-speed position sensing. They are also immune to angular vibrations.

Electricfil solution - ready technologies

Characteristics

- Temperatures -40°C to +160°C
- Zero-speed sensing
- High withstand capacity to severe environments
- Low signal-processing requirements
- Large airgaps up to 6 mm for a ring magnet or 3 mm for a metal target

- Typical accuracy: +/- 0.1°
- Small size
- Interface: 2-wire or 3-wire
- Vibration immunity: +/- 1.5°
- Wobble up to 1 mm

Electricfil knowhow

- Design of sensors and complete detection function
- Wide range of packages and interfaces
- Wide range of ASICs available

Application domains

Transmission

[Clutch actuation control](#)

[Gear-shift control](#)