

Active speed/position sensor



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 processes 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.

Electricfil solution - ready technologies

Characteristics

- Temperatures -40°C to +160°C
- Zero-speed sensing (e.g. crankshaft), TPO function (e.g. camshaft)
- High withstand capacity to severe environments
- Low signal-processing requirements
- Large airgaps up to 6 mm for a ring magnet or 3mm for metal target

- Accuracy:
 - camshaft: +/-1.5° (45 mm target diameter)
 - crankshaft: +/-0.5° (100 mm)
 - clutch input/output shaft: +/-0.1° (typical value)
- Repeatability: +/-0.02° (100mm)
- Size 12 mm diameter
- Interface: 2 or 3-wire, digital pulses

Electricfil knowhow

- Wide range of packages and interfaces
- Wide range of ASICs available

Application domains

Transmission

[Clutch actuation control](#)

[Gear-shift control](#)

Engine management

[Camshaft and crankshaft](#)