

# SSI Technologies - Application Note SP-AN1

## Magnetic Sensing Solutions

### Magnetic Sensing Solutions

SSI Technologies is a leader in the design, development and manufacturing of passive (**Variable Reluctance**) and active (**Hall Effect or Magneto-Resistive**) magnetic sensors. SSI has over 25 years of experience providing magnetic sensing solutions that meet the specific needs of our OEM customers.

Drawing from our extensive design and manufacturing history with major transportation platforms, our engineering staff will provide a custom sensing solution for your specific application. Some typical magnetic sensor applications include:

- **Vehicle Speed**
- **Camshaft Position Sensors**
- **Crankshaft Position Sensors**
- **Wheel Speed Sensors (in conjunction with Antilock Braking Systems (ABS))**
- **Transmission Speed Sensing**
- **Angular and Linear Position Sensing**

### Typical Sensing Features

- Field tested design modules (demonstrated low field warranty)
- Validated for operating temperatures of -40 to 150C
- Packaged to withstand harsh conditions including high vibration and moist environments
- Integrated connectors or custom dressed cable assemblies

Contact our inside sales associate at (608) 758-1500 or refer to our website [www.ssitechnologies.com](http://www.ssitechnologies.com) for a regional sales representative.

### Passive Sensors



Solid-State ABS Speed Sensor  
Wheel Speed Sensor



Integral Bearing VR ABS with Cable



VR Speed Sensor



VR Engine Crank Position Sensor

Passive sensors do not require an external power source and provides an analog output signal.

### Active Sensors



MR Transmission Speed Sensor



Hall Effect Speedometer Sensor

Active sensors require an external power source and provide a digital output signal with the following typical advantages:

- Zero Speed Capability
- Larger Air Gap Capability
- Smaller Packaging Size
- Performance is less sensitive to external influences (Ring geometry, temperature, vibration)
- Reduced sensitivity to external electrical/magnetic fields.
- Active solutions can be provided in either two or three wire packages, with near or true zero speed capability, and with various levels of internal circuit protection for EMI/ESD/reverse battery protection.