

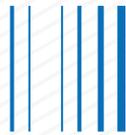
# End of Shaft Angular Position Sensing

End of shaft position sensing is a type of contactless position sensing that makes use of a magnet attached to the end of a rotating shaft and an AMR sensor to measure the change in magnetic field direction to infer the position of the shaft relative to the sensor.

## Advantages of AMR Technology



Immune to dust



Wider air gap tolerance



Ferrite magnets  
lower system cost

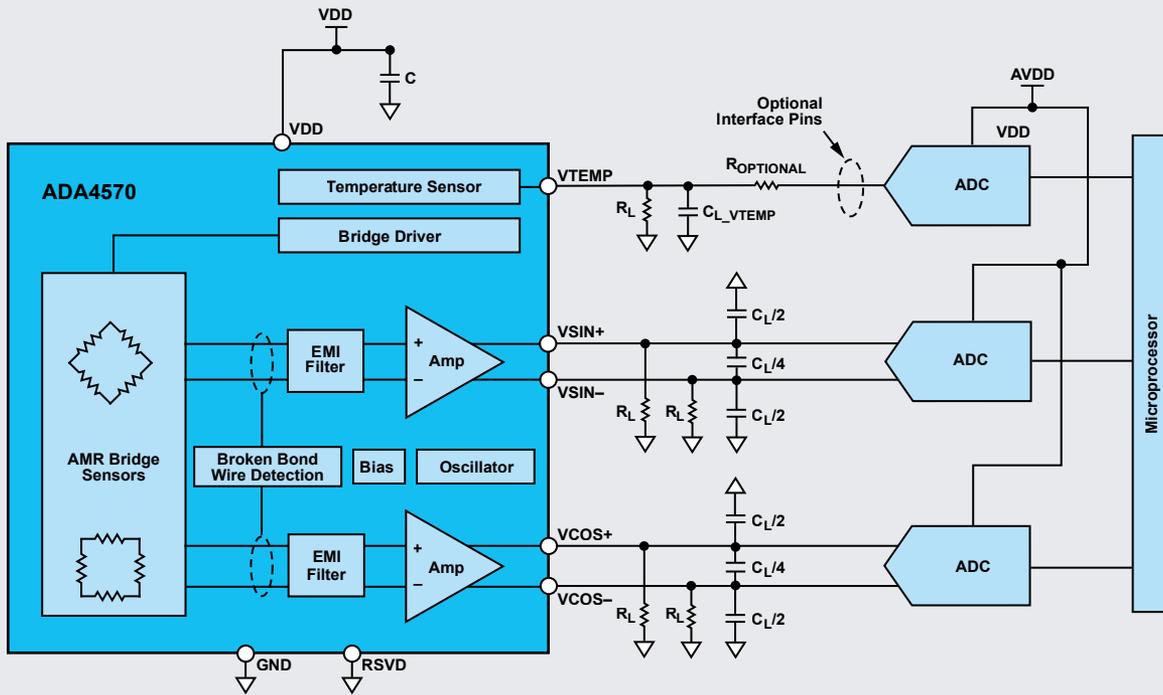


No upper magnetic  
field strength

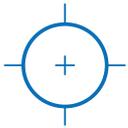


High stray field  
immunity

## Typical Signal Chain



## Key Features of Analog Devices AMR Sensors



High precision 180° angle sensor with low angular error



Single and differential analog sine and cosine output



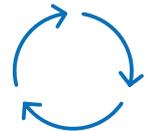
Low thermal and lifetime drift



EMI resistant



On-chip fault diagnostics



Suitable up to 50 krpm

AMR-based end of shaft position sensing is a position sensing methodology that makes use of a permanent magnet attached to the end of the shaft and an AMR sensor to measure the position of the shaft by measuring the magnetic field direction.

AMR sensors are one of the most robust and accurate magnetic field sensors and they perform exceptionally well in dusty and harsh environments. They offer high stray magnetic field immunity as AMR sensors have no upper limit on magnetic field strength. This makes them ideal for use in harsh electrical environments. The wide range of magnetic field strength also allows for wider air gap tolerance and a greater degree of flexibility while designing the solution.

The sensors also give reliable and accurate performance with ferrite magnets, enabling robust and low cost solutions.

Analog Devices offers high precision AMR angle sensors with inbuilt signal chains capable of sensing speeds up to 50 krpm with high accuracy. The sensors offer low thermal and lifetime drift and are capable of driving the ADCs without an ADC driver. ADI AMR sensors and ADCs enable high resolution and high accuracy encoder solutions for your position sensing requirements.



End of Shaft Position Sensing System

## Featured Products

ADA4570	Integrated AMR angle sensor and signal conditioner with differential outputs
ADA4571	Integrated AMR angle sensor and signal conditioner with single ended outputs
ADA4571-2	Dual integrated AMR angle sensor and signal conditioner
AD7866	2-channel, 1 MSPS, 12-bit, SAR ADC with serial interface
AD7380	1-channel, 4 MSPS dual simultaneous sampling, 16-bit SAR ADC with differential inputs