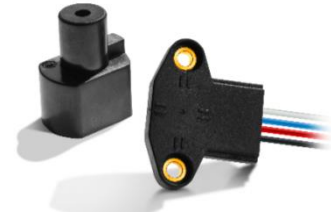


# Angle Position Sensors

## ANG Sensors

Thin, programmable, non-contact magnetic position sensors capable of continuous rotation, with dual outputs available.



### Description

The ANG Series sensors are non-contact, intrinsically linear position sensors with one or two independent (redundant) outputs. The sensors operate through the use of Hall Effect technology with magnetic fields generated by permanent magnets. They provide a linear change in voltage output (ratiometric to the input voltage) corresponding to an angular rotation of the input shaft.

Actuator magnet part number AS500106 is required to assure proper operation (ordered separately).

### Features

- Angular position sensor with high tolerance for misalignment
- Non-contact angular position sensing and full 360° rotation
- Custom programming available for: angle range, slope, PWM output – contact factory
- No mechanical interface means no parts to wear out or jam
- Comes with 20 AWG 305 mm (12") discrete wire leads
- RoHS Compliant
- IP68\*
- Maximum air gap of 6 mm (0.24")
- Compliant to industrial/automotive EMC/EMI/ESD directives

### Typical Applications

- Hydraulic valves
- Hydraulic controls
- Electric drives
- Pneumatic controls
- Zero-contact encoder alternative
- Gear selection / shifting position
- Lifting / ride height position
- Throttle / pedal position
- Steering wheel position

### Environmental Specifications

Operating Temperature -40 °C to 140 °C (-40 °F to 284 °F)

Ingress Protection IP68\*

\*\*Contact ZF for details on testing conditions

### Electrical Specifications

Input		
Supply Voltage	Maximum Overvoltage	Reverse Battery Protection
5.0 VDC ± 10%	16 VDC	12 VDC
Output Signal	0.5 – 4.5 VDC (with 5 VDC input)	
Input Current	Single output	8 mA typ., 10 mA max.
	Dual output	16 mA typ., 20 mA max.
Resolution	12 bit	
Accuracy, overall	Programmed angle sensing range 35° < 65° : ± 2.5% Full scale Programmed angle sensing range: 65° < 360° : ± 2.0% Full scale	
Output Linearity	Programmed angle sensing range 35° < 65° : ± 2.5% Full scale Programmed angle sensing range: 65° < 360° : ± 1.0% Full scale	

### Mechanical Specifications

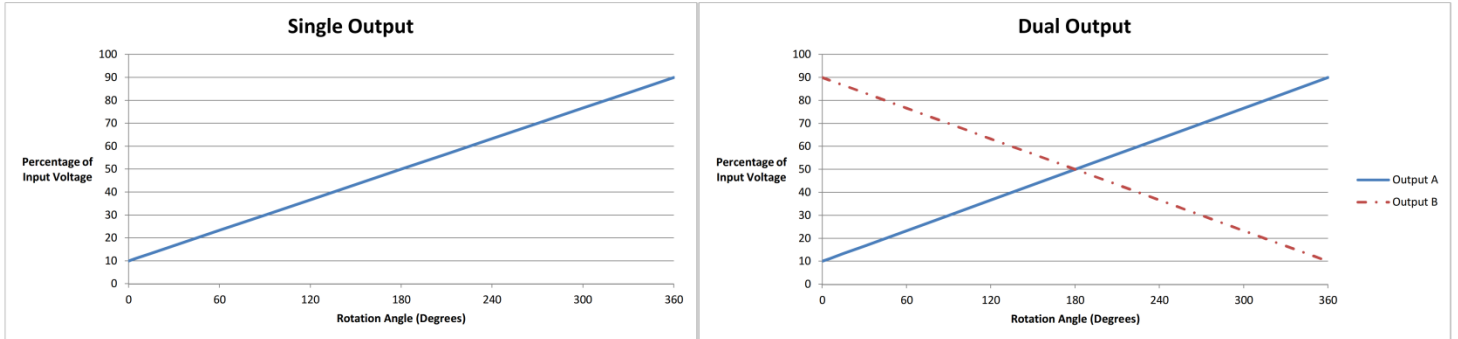
Measuring Range	0° to 360°, customizable (see graph)
Air Gap	1 mm to 6 mm (application dependent); 2.5 mm typ.
Eccentricity	± 2 mm (0.08")



## Products

Part Number	Output	Interface
ANG-11HAW1	Analog single	20 AWG x 305 mm (12") discrete wires
ANG-21HAW1	Analog dual	20 AWG x 305 mm (12") discrete wires

## Typical Output vs. Angular Rotation (as percentage of input)



## Dimensions mm (inches)

