

Angle Position Sensors

AN9 Sensors

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



Description

The AN9 Series sensors are non-contact, intrinsically linear contact angle position sensors with two independent 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.

Features

- Angular position sensor with high tolerance for misalignment
- Non-contact angular position sensing and full 360° rotation
- Dual independent (redundant) outputs assure high reliability
- Custom programming available for: angle range, slope, PWM output, custom magnets – contact factory
- No mechanical interface means no parts to wear out or jam
- Comes with 18 AWG 305 mm (12") wire leads
- RoHS Compliant
- IP67
- Maximum air gap of 5.5 mm (0.22")*

Typical Applications

- Implement (fork lift, agricultural trailer hitch, etc.) position sensing
- Steer, throttle by wire
- Gear selection
- Zero-contact encoder alternative
- Replacement for smart bearings
- Outboard trim sensing

Environmental Specifications

| | |
|-----------------------|---|
| Vibration | 15g sinusoidal, 9.26g RMS axial; 40 Hz – 2 kHz all 3 axes |
| Operating Temperature | -40 °C to 125 °C (-40 °F to 257 °F) |
| Storage Temperature | -40 °C to 150 °C (-40 °F to 302 °F) |
| Ingress Protection | IP67 |

Electrical Specifications

| | |
|------------------------------|--|
| Input Voltage | 5.0 VDC \pm 10% |
| Output Voltage | 10% to 90% of input (see graph for voltage vs. rotation angle characteristics) |
| Input Current | 14 mA typ., 16 mA max. |
| Output Current | -8 mA to 8 mA |
| Output Accuracy | \pm 3.5% |
| Output Linearity | \pm 3.5% |
| Maximum Overvoltage | 16 VDC |
| Absolute Max. Output Current | \pm 30 mA |
| Output Type | Analog (PWM available) |

Mechanical Specifications

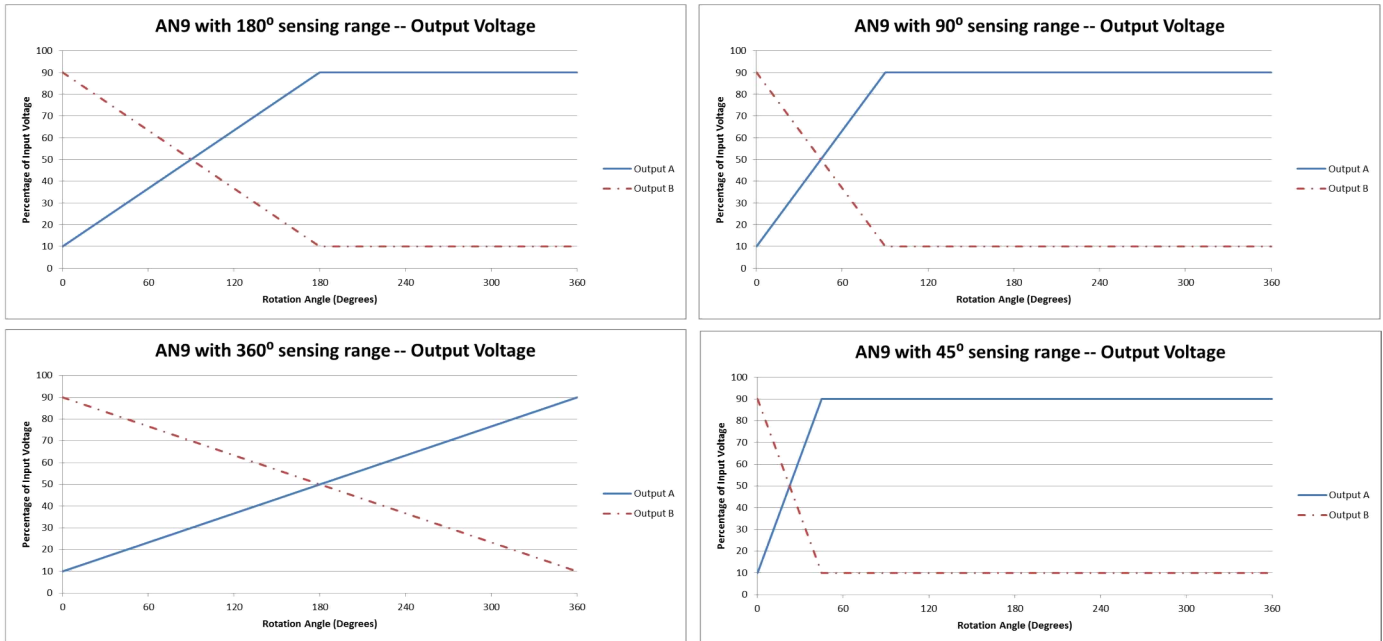
| | |
|---------------------------------|--------------------------------|
| Housing Material | Glass Reinforced Plastic |
| Mechanical Travel | 0° to 360° (continuous) |
| Maximum Air Gap* | 5.5 mm (0.22") |
| *with AS500106 magnet carrier | |
| Maximum Center-To Center Offset | 2 mm radial (magnet to center) |

Note: When used with AS500106 Magnet Carrier; user is responsible for determining characteristics when using other magnets.

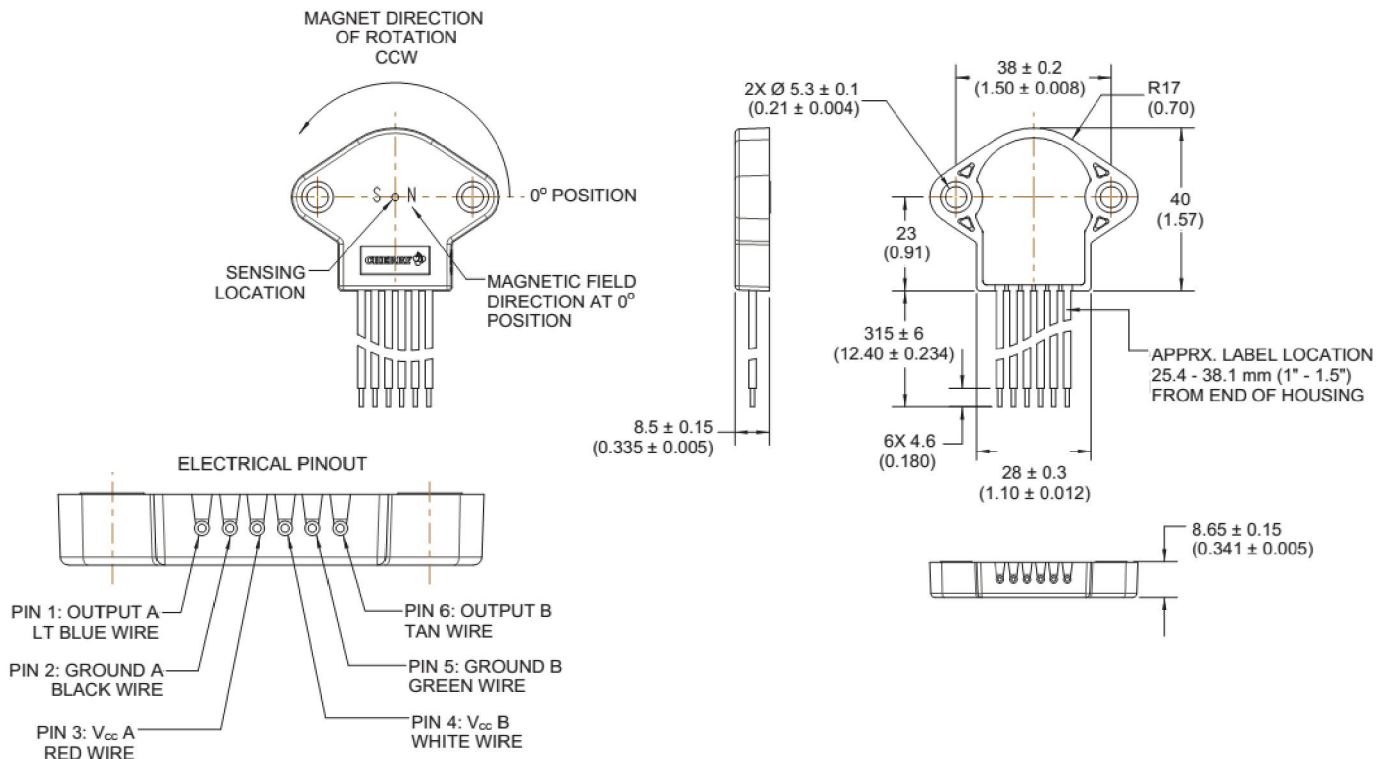
Products

| Part Number (Sensor) | Sensing Range | Wires |
|----------------------|---------------|-----------------------|
| AN920031 | 180° | 18 AWG x 305 mm (12") |
| AN920032 | 360° | 18 AWG x 305 mm (12") |
| AN920035 | 45° | 18 AWG x 305 mm (12") |
| AN920036 | 90° | 18 AWG x 305 mm (12") |

Sensor Output



Dimensions mm (inches)



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