

Angle Position Sensors

AN8 Sensors

Programmable, non-contact magnetic position sensors capable of continuous rotation



Description

The AN8 Series sensors are non-contact, intrinsically linear angle position sensors. 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
- Custom programming available for: angle range, slope, PWM output, custom magnets – contact factory
- No mechanical interface means no parts to wear out or jam
- Available with Delphi connector or 12" (305 mm) 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 | 6g sinusoidal, 8 g RMS axial; 40Hz – 2 kHz all 3 axes |
| Operating Temperature | -40 °C to 125 °C (-40 °F to 257 °F) with Delphi connectors, -40 °C to 150 °C (-40 °F to 302 °F) with wire leads |
| Storage Temperature | -40 °C to 150 °C (-40 °F to 302 °F) |
| Ingress Protection | IP67 |

Electrical Specifications

| | |
|------------------------------|--|
| Input Voltage | 5.0 VDC ± 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 | ±3.5% |
| Output Linearity | ±3.5% |
| Maximum Overvoltage | 16 VDC |
| Absolute Max. Output Current | ±30 mA |
| Output Type | Analog (PWM available) |

Mechanical Specifications

| | |
|---------------------------------|---|
| Housing Material | Glass Reinforced Plastic |
| Mechanical Travel | 0° to 360° (continuous) |
| Mating Connector | Delphi Metri-pak 150.2 12162185; Terminal 1214075 / 2047680 |
| Maximum Air Gap* | 5.5 mm (0.22") |
| *with AS500106 magnet carrier | |
| Maximum Center-To-Center Offset | 2 mm radial (magnet to center) |

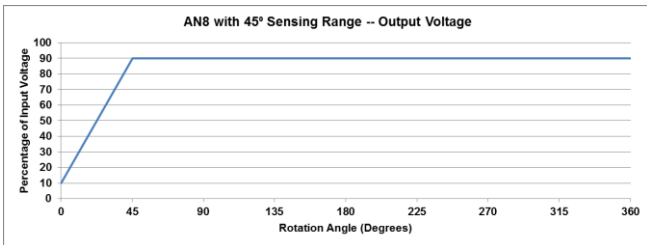
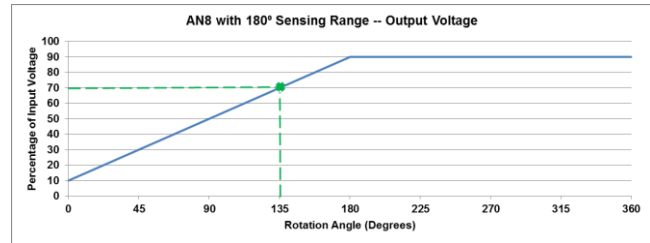
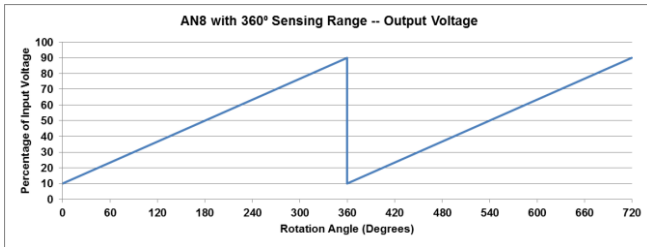


Products

| Part Number (Sensor) | Sensor (incl. AS500106 magnet) | Sensing Range | Wires | Connectors | Terminals |
|----------------------|--------------------------------|---------------|-----------------------|--------------------|-------------------|
| AN820001 | CU103601 | 180° | N/A | Packard Metri-pack | 1214075 / 2047680 |
| AN820002 | CU103602 | 360° | N/A | Packard Metri-pack | 1214075 / 2047680 |
| AN820003* | CU103603 | 45° | N/A | Packard Metri-pack | 1214075 / 2047680 |
| AN820031 | ----- | 180° | 18 AWG x 305 mm (12") | N/A | N/A |
| AN820032 | ----- | 360° | 18 AWG x 305 mm (12") | N/A | N/A |
| AN820033* | ----- | 45° | 18 AWG x 305 mm (12") | N/A | N/A |

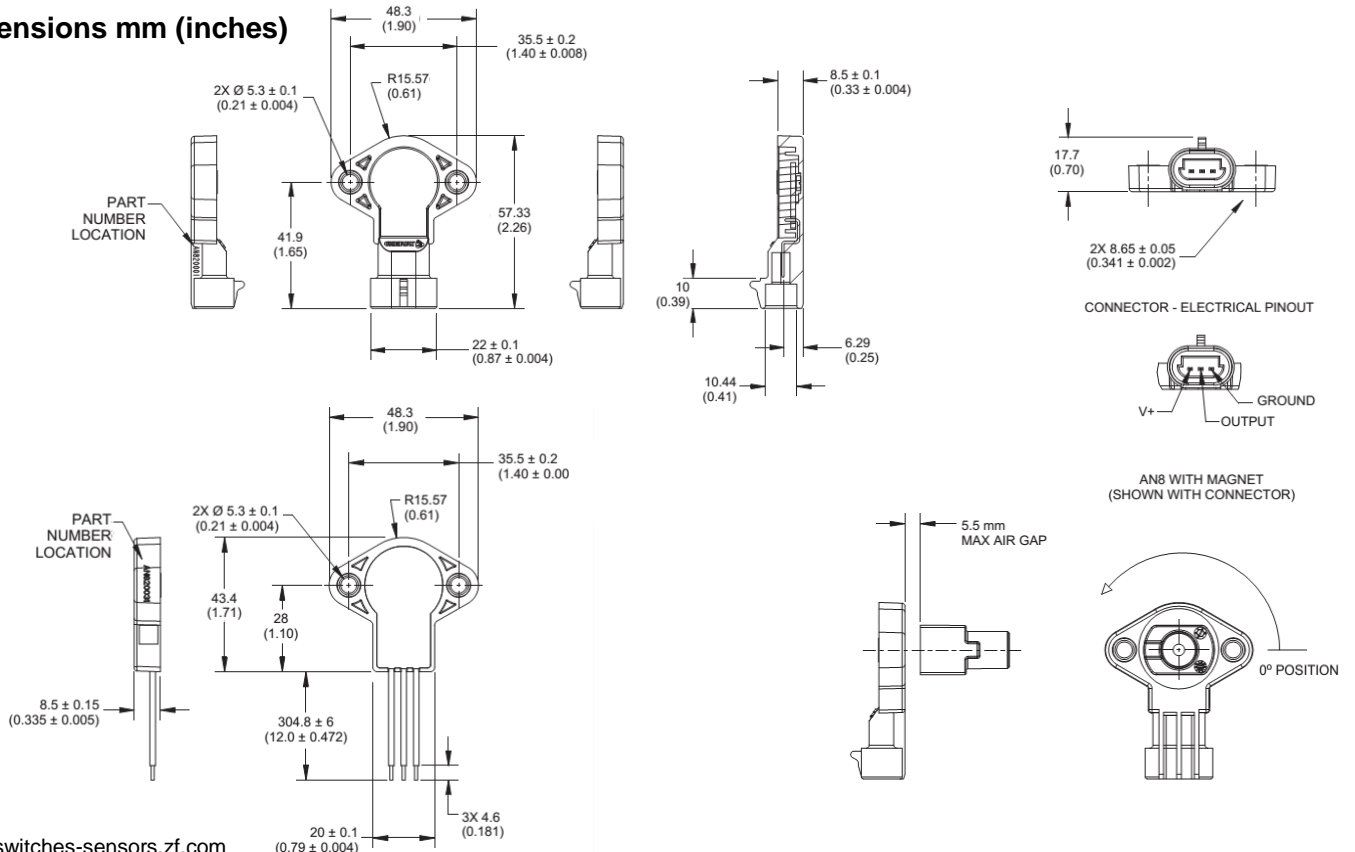
*Not commonly stocked

Sensor Output



These charts show the output voltage as a percentage of the input voltage for a given angle of rotation.
 Example: 180° sensing range, magnet rotated 135°, output voltage will be 70% of input voltage (see dashed lines in graph above).

Dimensions mm (inches)



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