# Angle Position Sensors



## AN1 Sensors

Intrinsically Linear Angle Position Sensor

### Description

The AN1 Series sensors are one-piece, intrinsically linear contact 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

- Patented intrinsically linear angle position sensor (ILAPS)
- Magnet/sensor orientation provides linear output from 5° to 85° of rotation without the need for electrical compensation
- Return spring provides resistance to CCW motion
- Fully encapsulated electronics
- RoHS compliant
- IP67

### Typical Applications

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

### Environmental Specifications

| | |
|---|---|
| Vibration | 1g RMS axial, 5g RMS horizontal, 8g RMS vertical; 20 Hz to 2 kHz |
| Operating Temperature | -40 °C to 125 °C (-40 °F to 257 °F) |
| Storage Temperature | -40 °C to 135 °C (-40 °F to 275 °F) |
| Ingress Protection | IP67 |

### Electrical Specifications

| | |
|---|---|
| Input Voltage | 5.0 VDC ± 10% |
| Output Voltage vs. Rotation Angle | 0° to 5° : 10% of Input Voltage, 5° to 85°: ratiometric (linear from 10% to 90% of Input Voltage), 85° to 120°: 90% of Input Voltage (see chart) |
| Input Current | 8 mA @ 5 VDC |
| Output Current | -1.25 mA to 1.25 mA |
| Output Linearity | ±2% |

### Mechanical Specifications

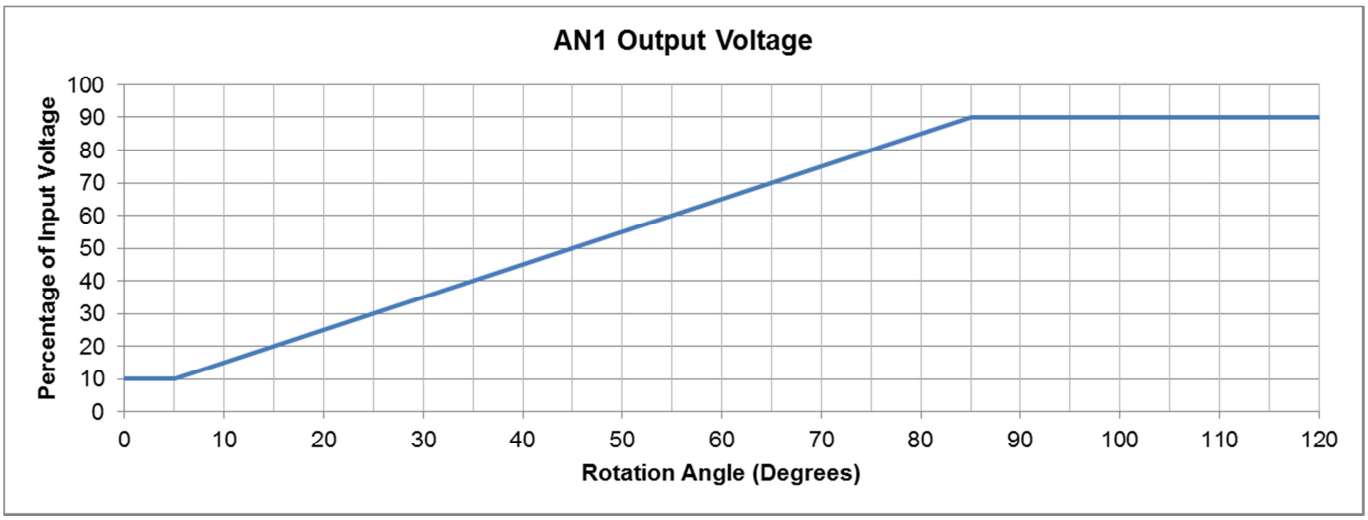
| | |
|---|---|
| Housing Material | Glass Reinforced Plastic |
| Mechanical Travel | 120° maximum rotation |
| Rotation Torque | 0.21 Nm (30 in•oz) max with return spring |
| Mass | 24 g (0.85 oz) |
| Life | +10 million full cycles |

### Products

| Part Number | Sensing Direction | Connector | Terminal | Housing |
|---|---|---|---|---|
| AN101101 | Counter-clockwise | Delphi Metri-pack 150 12162185 | Delphi 12124075 | Delphi 12162185 |

www.switches-sensors.zf.com *ZF Electronics Systems Pleasant Prairie, LLC ("ZF") acquired the rights to the CHERRY branded switches and sensors in 2008. Although ZF divested its interest in the CHERRY name in 2015, the switches and sensors remain unchanged and are now sold under the ZF brand.*

## Output Voltage




## Dimensions mm (inches)

