

THIN ANGULAR POSITION SENSORS

AN8/AN9 Series



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

Features and Benefits

- Angular position with high tolerance for misalignment
- Provides non-contact angular position sensing and full 360° rotation
- AN9 versions with dual (redundant) outputs assuring very high reliability
- 5VDC ratiometric device.
- Sealed design exceeds IEC 60529 IP68 standard for immersion
- Performs with AS500106 standard magnetic carrier
- PWM output option available for custom applications
- Provided with EMI/ESD protection to SAE J1113 standards
- No mechanical interface means no parts to wear out
- Available with wire leads 12" (305 mm)

Description

The sensor operates by rotating a magnetic actuator close to the face of the sensor. Output voltage varies with angular position of the magnet relative to the sensor.

Optimal performance is achieved with Cherry's AS500106 magnetic actuator. Sensor kits including this standard magnet are available

Applications

- Throttle position sensor
- Replacement for smart bearings
- PRNDL switch for harsh environments
- Steer wheel position for drive by wire systems
- Pedal position sensor

Mechanical Specifications

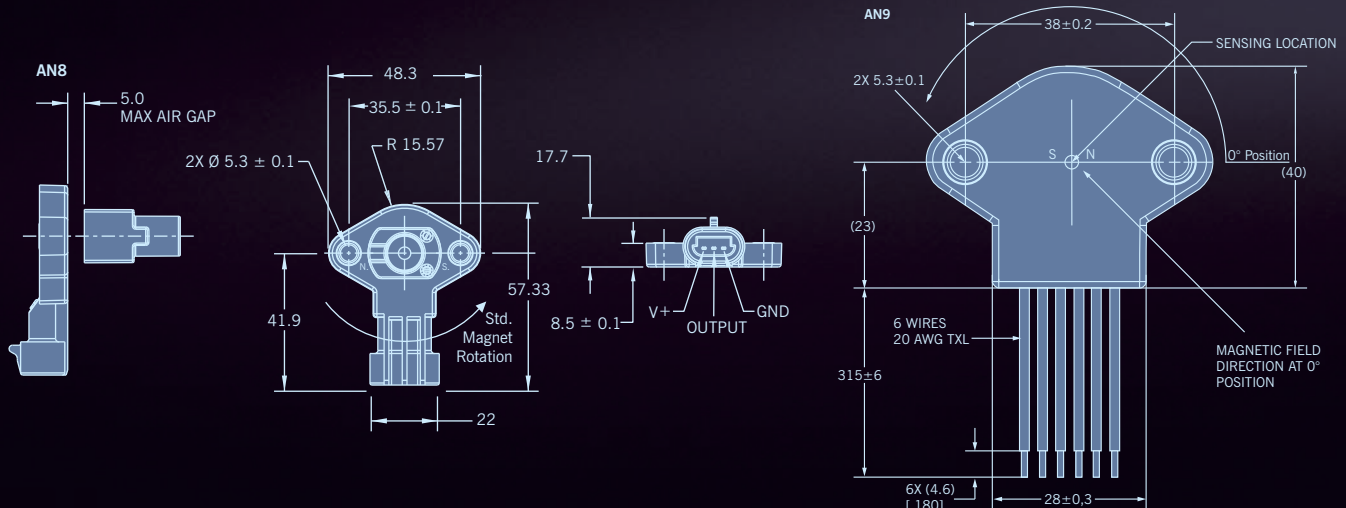
Mechanical Travel	0 to 360 degrees (no stops)
Dither	No mechanical contact
Mating Connector	Connector: Delphi Metri-pak 150.2 12162185 Terminal:12124075
Maximum Air Gap	5 mm
Maximum Center-to-Center Offset	2 mm diameter (magnet to sensor)

Part Number Sensor	Part Number Set incl. magnet*	Sensing range	Interface
AN820001	CU103601	180°	Connector
AN820002	CU103602	360°	Connector
_____	CU103603	45°	Connector
AN820031	_____	180°	Wires
AN820032	_____	360°	Wires
AN920031	_____	180°, dual output	Wires
AN920032	_____	360°, dual output	Wires
AN920036	_____	90°, dual output	Wires

*Sensor plus AS500106

Dimensions inches (mm)

All tolerances ± 0.005 (0.13) unless otherwise noted.



Specifications subject to change without notice.



Electrical Specifications

Effective rotational sensing range	0 to 360 degrees of rotation
Input Voltage	5.0VDC \pm 10%
Max Overvoltage	14VDC reversed voltage -10VDC
Output Current Range	8 mA
Resolution	Analog
Conduction and Coupling	SAE J1113-12; \pm Level 3
Electronic Discharge	SAE J1113-13; \pm 15kV
Immunity to Magnetic Fields	SAE J1113-21
Conducted Transient Emissions	SAE J1113-42
Radiated Emissions	SAE J1113-41; Class 4
Output Linearity (with supplied magnet)	\pm 2.5% Full Scale
Analog Output Slew Rate	200V.ms
Accuracy	\pm 2%
Operating Temperature	-40 to 125°C

Sensor Output Signal

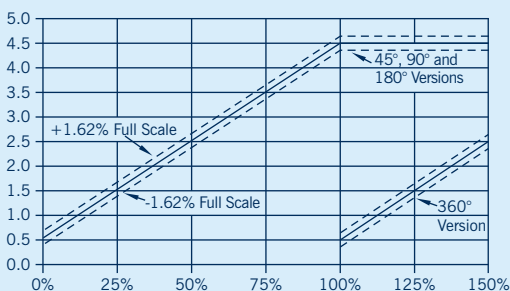
Rotation Angle

(Percent of Sensing Range: 45°; 90°; 180°; or 360°)

Output Voltage

($V_s = 5$ VDC.)

Output is ratiometric for $V_s = 4.5$ to 5.5 VDC.)



Sensor	Sensing Range	Sensor/Magnet Assembly Kit #
AN820001	180°	CU103601*
AN820002	360°	CU103602*
AN820003	45°	CU103603*

Magnets

Actuator Magnet

AS101001

Easy to install actuator magnet with threaded aluminum holder.

- South pole facing Alnico magnet

Also available in the same package:

- AS101002 with north pole facing Alnico magnet
- AS101003 with south pole facing samarium cobalt magnet

Magnet Carrier

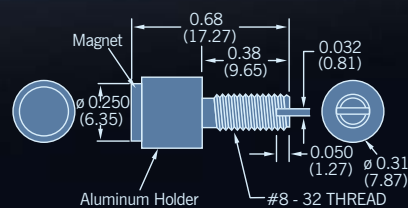
AS500106

- PPS Housing
- SmCo28 Magnet
- Recommended fastener: M4 Cap Screw
- Recommended torque: 3 Nm (26.5 in lbs.)

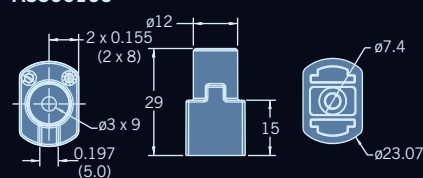
Dimensions inches (mm)

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AS101001



AS500106



*Includes AN8 sensor and AS500106 magnetic actuator