

DUAL OUTPUT ROTARY POSITION SENSOR

AN9 Series

Non-contacting magnetic position sensor with two independent outputs – ideal for high reliability sensing applications



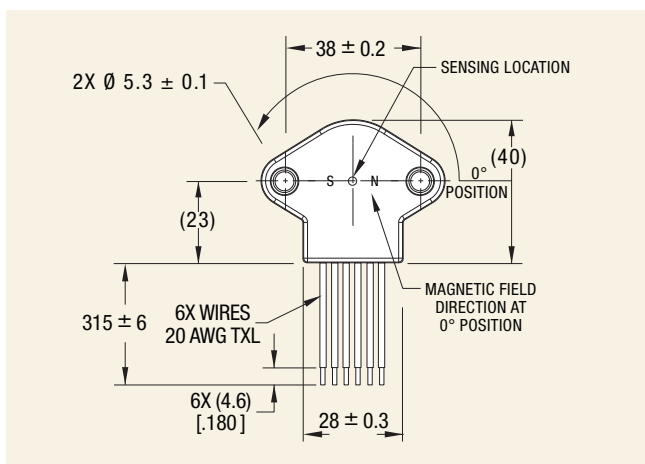
Description

This sensor is designed for continuous output corresponding to the rotation angle of a magnetic actuator, typically Cherry's AS500106. Two electrically independent outputs assure very high reliability. Outputs have intentionally different transfer functions. This allows the connected controller to diagnose any problems in the sensing system, such as short circuits, broken wires, etc.

Applications

- Angular position in electro-hydraulic system (heavy equipment control)
- Steer wheel position (steer by wire)
- Shifter position (shift by wire)
- Brake pedal position (brake by wire)

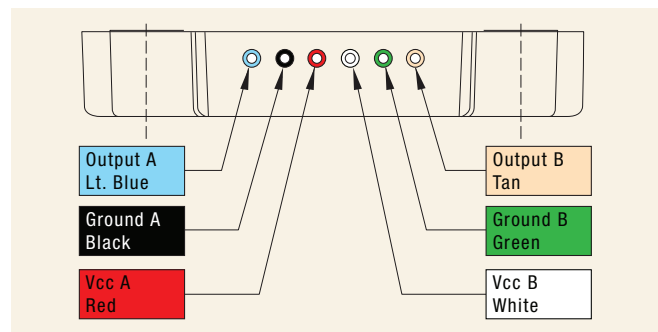
Dimensions mm



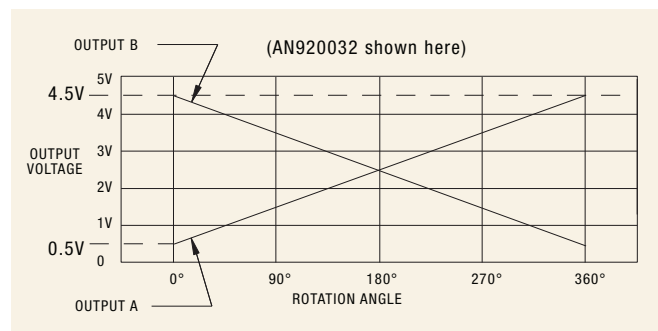
Features and Benefits

- Rotary position sensor with high tolerance for misalignment
- Dual (redundant) outputs assure very high reliability
- Non-contact rotary position sensing to full 360° rotation
- No mechanical interface:
 - Nothing to break or wear out
 - No possibility of jamming or resistance to motion
- Sealed design meets IP68 level water immersion per IEC 60529
- 5VDC ratiometric outputs
- Linear output over specific angular rotation ranges available on request
- Performs with standard AS500106 magnetic actuator – factory programmable for use with other magnets
- Custom programming option for rising or falling output slope with selectable offset, gain, clamp voltage
- PWM output option available for custom applications
- Rugged design includes EMI/ESD protection to SAE J1113 standards
- Maximum operating temperature of 125°C, 150°C optional

Wire Color Code



Typical Sensor Outputs





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Mechanical Specifications

Mechanical Travel	0 to 360 degrees (no stops)
Dither	No mechanical contact
Termination	6 x 315mm 20AWG lead wires
Maximum Air Gap	5mm
Maximum Center-to-Center Offset	2mm (magnet to sensor)

Electrical Specifications

Sensing Range	0 to 360 degrees of rotation
Input Voltage	5.0 VDC \pm 10%
Output Voltage	0.5 to 4.5 VDC (ratiometric)
Output Accuracy (with AS500106 magnet)	\pm 2.5% Full Scale
Output Smoothness (with AS500106 magnet)	\pm 0.5% Full Scale for any 2% interval
Output Linearity (with AS500106 magnet)	\pm 2.0% Full Scale
Maximum Overvoltage	20 VDC
Maximum Reverse Voltage	-10 VDC
Maximum Output Current	8mA
Minimum Output Current	-8mA
Resolution	Analog
Electrostatic Discharge	SAE J1113-13; \pm 8kV
Immunity to Radiated Electronic Magnetic Fields	SAE J1113-4; 1 MHz to 400 MHz
Conducted Transient Emissions	SAE J1113-42; \pm 25V
Analog Output Slew Rate	200 V/ms
Operating Temperature	-40 to 125°C (150°C max option)

Ordering Information

Sensor	Output A*	Output B*
AN920031	0° – 180° inc	0° – 180° dec
AN920032	0° – 360° inc	0° – 360° dec
AN920034	0° – 360° inc	90° – 90° dec
AN920035	0° – 45° inc	0° – 45° dec
AN920036	0° – 90° inc	0° – 90° dec

*inc – Output is increasing from 0.5 to 4.5 volts
dec – Output is decreasing from 4.5 to 0.5 volts

Magnet assembly AS500106 must be ordered separately.

Contact

Call, fax or visit our website for more information.

Cherry Electrical Products

11200 88th Avenue
Pleasant Prairie, WI 53158
Phone: 800 285 0773 • 262 942 6500
Fax: 262 942 6566
Web: www.cherrycorp.com
e-mail: cep_sales@cherrycorp.com