Revolutionary thinking

Play resistant

Our unique custom touchless variable gap sensor maintains stable electrical output and specified linearity on mobile shafts despite variation in radial and axial movement in an application's service life.

• Any arc magnet diameter
• Any air-gap distance
• Harsh environment sealing

PIHER SERVICE
PS2P-ARC
Variable air gap touchless sensor.

Main features.
- True touchless operation: free from wear and tear.
- Selectable output: analogue (ratiometric), PWM, SPI.
- Linearity: +/-1% absolute (+/-0.5% absolute upon request).
- Supply voltage: 5, 12, 15V.
- Voltage protection: +/-10V.
- Unlimited rotational life.
- Mechanical rotation angle range: max 180º.
- Electrical rotation angle range: min 15º.
- Radial play: +/- 5mm (others on request).
- Axial play: +/- 7mm (others on request).
- Simple, redundant and full redundant versions available.
- Sealing: IP69k.
- Magnet diameter: touchless custom.
- Mounting: custom.
- Connectivity: custom.
- Automotive
- Industrial
- Marine
- Off-highway
- Transportation

Sensing the position, avoiding contact.
The touchless variable air gap sensor creates immunity to radial and axial play on mobile shafts where significant misalignment results in poor operational performance and labour intensive maintenance programmes. It complements our PS2P-LIN and PS2P-CON series of air-gap non-contact linear and angular position sensors.

A round or arc magnet (where 360º rotation angle is unnecessary) is attached to rotating parts of kits, such as boom loaders, skid steer buckets and hitch arms, and the electronics module to the chassis (or vice versa).

Here, Piher separates the magnet from the electronics module.

As an absolute sensor it will not loose the values even after a power failure.

All Piher sensors are compact, low-profile, yet extremely rugged and can be custom-engineered to fit existing mechanical assemblies.

Touchless working principle
Measurement of angular position using variation of magnetic field amplitude induced by the displacement of a moing magnet has been intensively developed over the last fifteen years. However, these solutions have limits in terms of angular range and temperature influence.

The technology used by Piher is only sensitive to the flux density coplanar with the IC surface.

The angular information is computed from both vectorial components of the flux density (i.e. BX and BY) of a proprietary magnetized magnet. Then an output signal proportional to the decoded angle is produced.

Selling points
• True touchless operation: free from wear and tear.
• Selectable output: analogue (ratiometric), PWM, SPI.
• Resolution: analog & PWM: 12 bits / SPI: 14 bits.
• Linearity: +/-1% absolute (+/-0.5% absolute upon request).
• Supply voltage: 5, 12, 15V.
• Voltage protection: +/-10V.
• Unlimited rotational life.
• Mechanical rotation angle range: max 180º.
• Electrical rotation angle range: min 15º.
• Radial play: +/- 5mm (others on request).
• Axial play: +/- 7mm (others on request).
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Typical applications examples.

Steering
Throttle control
Rear hitch arm
Rotary bucket shaft
Lift and shuttle
Brake and throttle pedal

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