

Revolutionary thinking

Play resis+ant

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.

PIHER+
SERVICE

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



PS2P-ARC

Variable air gap touchless sensor.



Description.

Something that is truly contactless. One magnet, One electronics module. No gears. Nothing to wear out over a lifetime.

A sensor that will deliver the same level of precision and stability throughout its life as the first day it was installed - despite extremes of vibration, shock, temperature and contamination.

Something that is easy to assemble - delivering additional cost reduction on the production line.

Something that can be fitted anywhere on the shaft, giving engineers the flexibility to be creative.

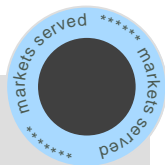
Our touchless sensor is Piher Sensors & Controls at its best, packaging its core technology - slimline magnetic Hall Effect sensing - into something truly original.

Main features.

- 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.
- Supply current: typ 8.5mA for single output/17mA for dual output.
- Voltage protection: +/-10V.
- Unlimited rotational life.
- Mechanical rotation angle range: max 180°.
- Electrical rotation angle range: min 15°.
- Radial play: +/- 5mm (others on request).
- Axial play: +/- 7 mm (others on request).
- Simple, redundant and full redundant versions available.
- Sealing: IP69k.
- Magnet diameter: touchless custom.
- Mounting: custom.
- Connectivity: custom.



- Agriculture.
- Construction & forestry.
- Material handling.
- Lifts & cranes.
- Marine.



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 360° rotation angle is unnecessary) is attached to rotating parts of kit, 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 lose 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.

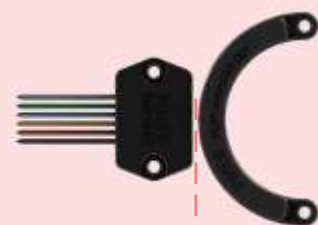
Touchless working principle



Measurement of angular position using variation of magnetic field amplitude induced by the displacement of a moving 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.



Air gap (non contact)

Typical applications examples.



Rear hitch arm



Steering Throttle control



Rotary bucket shaft



Custom touchless sensor for agriculture applications.

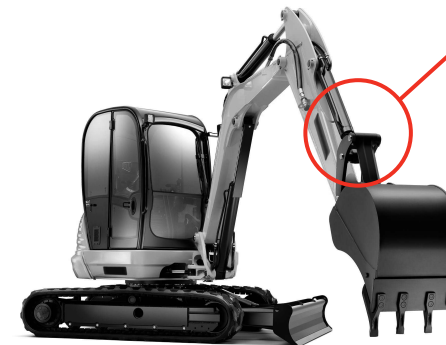


Electronics module

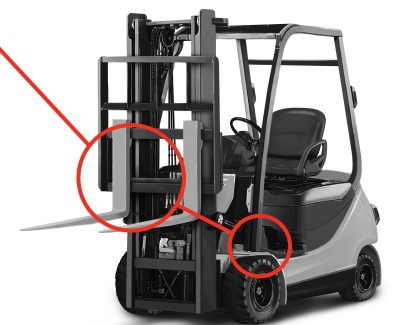
Magnet module



Custom touchless sensor for marine applications.



Rotary boom loader shaft



Lift and shuttle Brake and throttle pedal

