Connecting your world through Sensing Innovations

Piher Sensing Systems - Amphenol Sensors

BENEFITS

- ✓ Value added proposition:
  - o Engineering design-in support.
  - o Cable harness and connector assembly.
  - o Output customization.
  - o Manufacturing capabilities for high and low volume programs.
- ✓ One-stop solution provider for different position sensing technologies (hall-effect, inductive, capacitive and contacting).
- ✓ One-stop sensor provider not limited to Position sensors (Temperature, Gas & Moisture, Pressure, etc.) with diverse product portfolio of standard and customized products.
- ✓ Piher Sensing Systems has a global footprint through Amphenol Sensors providing local customer support.

INDUSTRY SECTORS

Automotive | Agriculture | Construction | Material handling | Industrial | Marine | Medical

rev06

PIHER sensing systems

Hall-Effect contactless sensors

It all revolves around our thinking

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Amphenol Sensors

Open thinking

End-of-shaft sensing

You know the benefits of contactless rotary position sensors—long-life and high accuracy. But finding a drop-in contactless alternative to your existing contacting solution can be a struggle.

To give you the flexibility you need, we´ve created **Piher Service +.**

We´ll customise anything for you from our off-the-shelf magnetic Hall effect range.

+ Any shaft diameter
+ Any dimension
+ Any output protocol
+ Integrated connector or wire harness interface

	PSC-360U	PSC-360	PSC-360IC
Output	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI
Resolution	Analog/PWM: 12 bits Serial (SPI): 14 bits	Analog/PWM: 12 bits Serial (SPI): 14 bits	Analog/PWM: 12 bits Serial (SPI): 14 bits
Linearity	±1% absolute (0,5% upon request)	±1% absolute (0,5% upon request)	±1% absolute (0,5% upon request)
Supply voltage	5V - 12V - 15V	Up to 30V	5V - 12V - 15V
Supply current	Typ 8.5mA for single version. Typ 17mA for redundant version	Typ 8.5mA for single version. Typ 17mA for redundant version	Typ 8.5mA for single version. Typ 17mA for redundant version
Voltage protection	+10V over voltage protection and –10V reverse voltage protection	+10V over voltage protection and –10V reverse voltage protection	+10V over voltage protection and –10V reverse voltage protection
Rotational life	Up to 50M cycles	Up to 50M cycles	Up to 50M cycles
Switch output	Yes, programmable	Yes, programmable	Yes, programmable
Angular range	Up to 360º (no dead band)	Up to 360º (no dead band)	Up to 360º (no dead band)
Redundancy	Yes	Yes	Yes
Diameter size	Shaft: 6.35mm	Shaft: 6mm	Shaft: 6mm
Mounting	Flange/PCB	Flange/Fly lead harness	Flange/Metripack 150.2
Sealing	IP67	Up to IP69	IP67

Original thinking

Through shaft sensing

Slimline, low cost, long life
360º sensing for extreme environments
using the magnetic Hall effect

Absolute output with linearity up to **+/- 0.5%** for over **50 millon cycles**

Off the shelf: 14 and 17mm rotor diameter

+ Any diameter
+ Any shape
+ Any output protocol

	PST-360	MTS-360	MTS-360PCB
Output	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI
Resolution	Analog/PWM: 12 bits Serial (SPI): 14 bits	Analog/PWM: 12 bits Serial (SPI): 14 bits	Analog/PWM: 12 bits Serial (SPI): 14 bits
Linearity	±1% absolute (0,5% upon request)	±1% absolute (0,5% upon request)	±1% absolute (0,5% upon request)
Supply voltage	Up to 30V	5V	5V
Supply current	Typ 8.5mA for single version. Typ 17mA for redundant version	Typ 8.5mA for single version. Typ 17mA for redundant version	Typ 8.5mA for single version. Typ 17mA for redundant version
Voltage protection	+10V over voltage protection and –10V reverse voltage protection	+20V over voltage protection and –10V reverse voltage protection	+20V over voltage protection and –10V reverse voltage protection
Rotational life	Up to 50M cycles	Up to 50M cycles	Up to 50M cycles
Switch output	Yes, programmable	Yes, programmable	Yes, programmable
Angular range	Up to 360º (no dead band)	Up to 360º (no dead band)	Up to 360º (no dead band)
Redundancy	Yes	Yes	Yes
Diameter size	Hollow shaft: 14mm or 17mm	Hollow shaft: 4mm	Hollow shaft: 4mm
Mounting	Flange/Fly lead harness	SMD mount	Flange/Molex connector
Sealing	Up to IP69	IP50	IP50

Revolutionary thinking

Play resis+ant

The **variable gap** sensor creates immnunity to radial and axial play on mobile shafts where significant misalignment results in poor operational performance and lobour intensive maintenance programmes.

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

+ Any arc magnet diameter
+ 3 +/- 2 mm air-gap distance
+ Harsh environment sealing
+ Possibility to customise the air-gap distance

Touchless magnetic

Our touchless sensors feature two independent mechanical modules containing the target magnet and the sensor electronics positioned as an on-shaft configuration. The sensor is a truly contactless sensor due to there is not physical connection between the electronics (stationary element) and the target magnet (moving element). This type of sensor provides the same precision as one piece sensors and allows both **Rotary** and **Linear** sensing strokes.

Something that is easy to assemble – less sensitive to the application shaft´s axial and radial plays - delivering additional cost reduction on the production assembly.

Designed to be fitted in harsh environment applications such as Off-highway and Marine due to the fully sealed electronics and magnet.

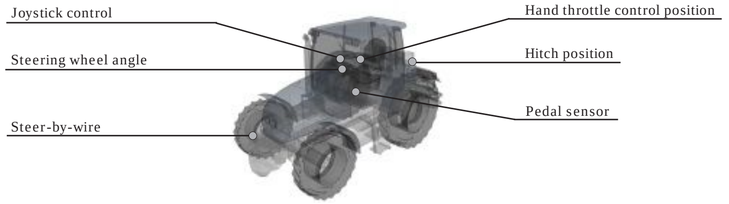
+ Truly contactless
+ Precision and stability
+ Easy to assemble
+ Rotary and linear displacement feedback

Touchless magnetic hall-effect

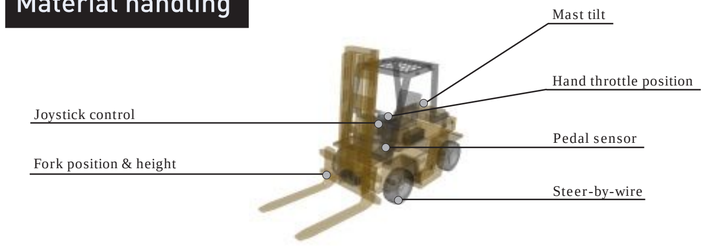
	Variable air gap sensor	Rotary concentric sensor	Linear position sensor
	PS2P-ARC (custom solution only)	PS2P-CON	PS2P-LIN
Type	Rotary	Rotary	Linear
Output	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI	Analog (ratiometric), PWM, SPI
Resolution*	Analog/PWM: 12 bits; Serial (SPI): 14 bits	Analog/PWM: 12 bits; Serial (SPI): 14 bits	Analog/PWM: 12 bits; Serial (SPI): 14 bits
Linearity	± 1% absolute (0,5% upon request)	± 1% absolute (0,5% upon request)	± 1% absolute (0,5% upon request)
Supply voltage	Up to 30V	up to 30V	up to 30V
Supply current	Typ 8.5mA for single version Typ 17mA for redundant version	Typ 8.5mA for single version Typ 17mA for redundant version	Typ 8.5mA for single version Typ 17mA for redundant version
Voltage protection	+ 10V over voltage protection -10V reverse voltage protection	+ 10V over voltage protection -10V reverse voltage protection	+ 10V over voltage protection -10V reverse voltage protection
Life	Virtually unlimited	Virtually unlimited	Virtually unlimited
Switch output	Yes, programmable	Yes, programmable	Yes, programmable
Measurement range	Custom	Up to 360º	12mm
Redundancy	Yes	Yes	Yes
Nominal air gap***	Custom	3mm	3mm
Maximun air gap***	Custom	5mm	5mm
Sealing	Up to IP69	IP69	IP69

* depends on electrical angle and rotational speed
** depending on application and mounting
*** others upon request

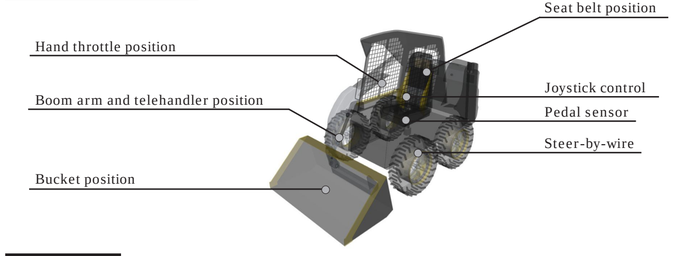
Agriculture & Forestry



Material handling



Construction



Marine