Enabling the Electronics Revolution

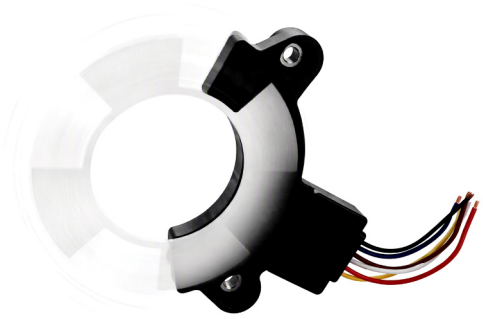
PIHER sensing systems
an Amphenol® company

ARC iRPS Inductive Rotor Position Sensor

Absolute, magnet-free position feedback for high-speed electric motors

Piher inductive position sensors provide accurate absolute rotor position feedback using PCB-integrated coils and a passive metallic target. Their magnet-free architecture offers immunity to stray magnetic fields and high tolerance to vibration and tilt.

Compact and lightweight, the sensor-target system can be customized for different motor geometries and mechanical layouts. Available in arc and off-axis configurations, ARC iRPS provides a flexible, cost-effective alternative to traditional resolvers in electric and hybrid powertrains.



> Absolute rotor position feedback
> Maximum speed: up to 600,000 rpm
> Magnet-free sensing technology
> Immunity to stray magnetic fields
> High tolerance to vibration and tilt
> Compact and lightweight PCB-based design
> Customizable sensor and target geometry
> Suitable for high-speed motor applications



SPECIFICATIONS	
Output	Analog: differential sine/cosine Digital: ABI, SPI, UVW
Maximum speed	600,000 rpm electrical
Configuration	Through-shaft; End-of-shaft; Arc / Off-axis
Resolution	Analog: infinite Digital: up to 14 bits
Functional safety	ISO26262 available as custom developments: • up to ASIL C in single versions • up to ASIL D in redundant versions
Propagation delay	< 4.2 µs
Accuracy	±1°electrical
Supply voltage	5V ±10%
Operating temperature	-40°C to +160°C
Power consumption	< 20 mA (no load)
Voltage protection	+18V over voltage, -18V reverse voltage
Life	Virtually unlimited
Sealing	IP67, IP69K
Pole pairs	Up to 32

Other specifications available upon request.

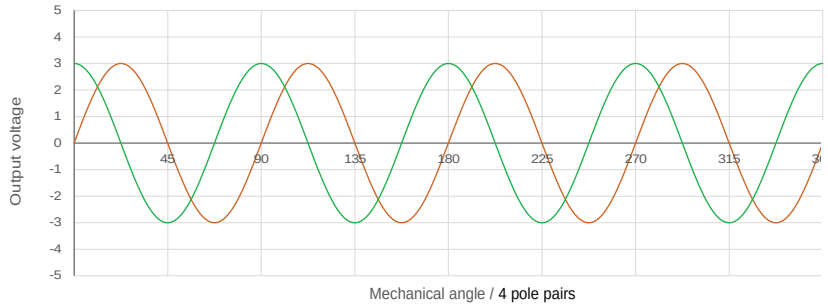
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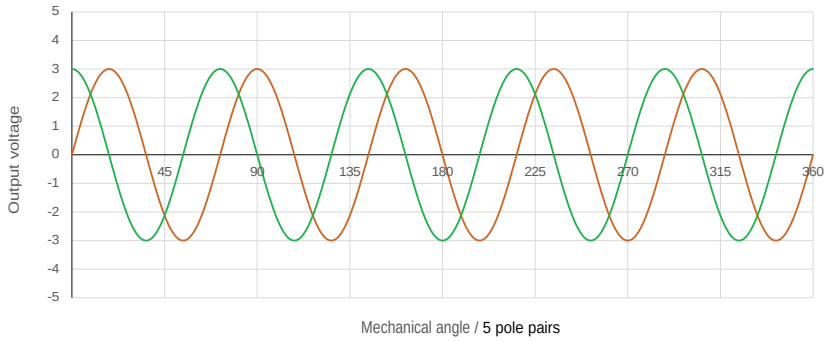
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Absolute, magnet-free position feedback for high-speed electric motors

SIN/COS OUTPUT SIGNALS

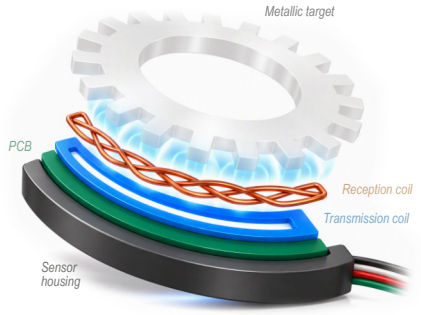
Differential analog sine and cosine output signals examples

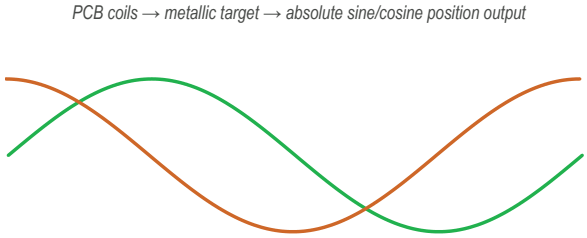






Inductive ARC rotor sensing operating principle





RELATED PRODUCTS

INDUCTIVE HIGH-SPEED ROTARY POSITION SENSOR

Piher Sensing Systems' high-speed inductive position sensing technology provides an alternative to traditional resolvers.

The possibility to perfectly customize the sensor to the motor geometry and packaging requirements enables more flexibility in the development of the electric and hybrid powertrains of the future.

- Max. speed: up to 600.000 rpm electrical
- Resolution: analog: infinite; digital: up to 14 bit
- Operating temperature: -40°C to +160°C
- Power consumption: < 20mA (no load)
- Sealing: IP67, IP69K
- Up to 32 pole pairs
- Magnet-less



Explore available models at www.piher.net

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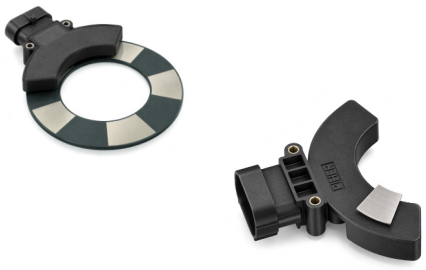
ARC iRPS Inductive Rotor Position Sensor

Absolute, magnet-free position feedback for high-speed electric motors

CONFIGURATION POSSIBILITIES EXAMPLES

End-of-shaft	Through-shaft	Arc / side-shaft





Fully customizable ARC form and fit



Explore available models at www.piher.net

One technology.
multiple
CONFIGURATION
possibilities.

REQUEST A QUOTE →

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ISO 9001 Quality Management Systems CERTIFIED

ISO 14001 ISO 45001 BUREAU VERITAS Certification

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RARE EARTH FREE

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