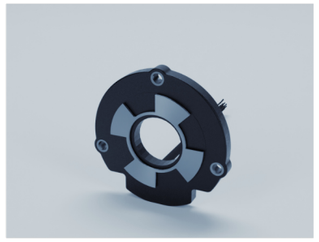
e-Motor Rotor Position Sensors

Inductive high-speed sensors for precise motor control

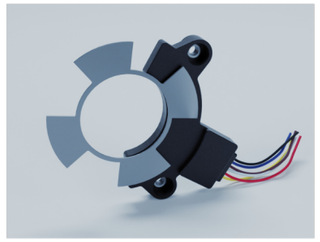
Inductive rotor position sensors use the physical principles of induction in a wire loop and eddy currents to detect the position of a conductive metallic target that is rotating above a set of printed copper coils. They also offer the advantage of being low profile and lightweight.

The sensor design can be completely adapted to the size, installation space and number of pole pairs of the motor, including the choise of connector, sealing and support of safety-critical applications up to ASIL-D.

End-of-shaft



Through-shaft

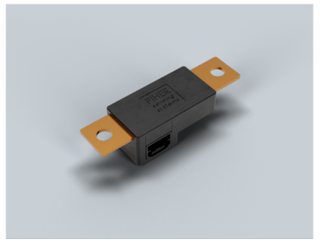


Arc / segment

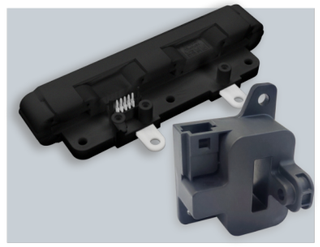
Current Sensors

Accurate measurement for battery management and inverters

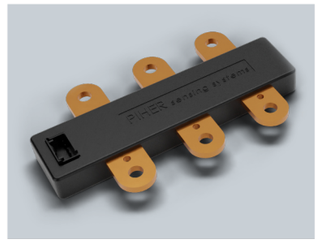
Piher Sensing Systems offers current sensors based on two different technologies, both designed to withstand demanding electrical environments: open-loop Hall-effect and coreless TMR sensors. These sensors provide accurate, non-intrusive measurement of currents with galvanic separation between power and control, ideal for applications with high voltage (up to 800 V) and high current (up to 4000 A). Additionally, they offer wide bandwidth (up to 1 MHz) to capture fast-changing signals, while minimizing crosstalk and maintaining stability even under extreme temperature fluctuations.



One-phase TMR Current Sensors



Busbar mounted Current Sensors



Three-phase TMR Current Sensors

Position Sensing for Transmissions

High performance contactless sensing solutions for the modern drivetrain industry

Input and output speed, park-lock position, PRNDL, piston stroke, clutch position disconnect units, transfer cases, gear speed and gear position are just a few applications in the vehicle drivetrain that depend on precise position measurement. Both custom and off-the-shelf are qualifiable for ASIL level.

Gear tooth Speed Sensors

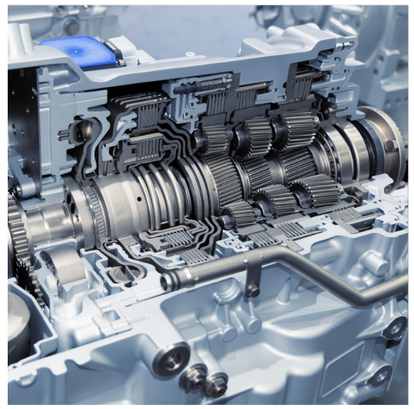
Inductive Angular Sensors

Inductive Linear Sensors

www.piher.net

HIGH SPEED INDUCTIVE ROTOR POSITION SENSORS, TMR CURRENT SENSORS FOR INVERTERS AND OTHER EV PRODUCTS

PIHER sensing systems
an Amphenol® company

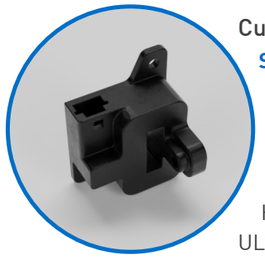


Amphenol Sensors

Electric Vehicle Sensor Solutions

EV Powertrain, Power Electronics and Battery Sensor Solutions

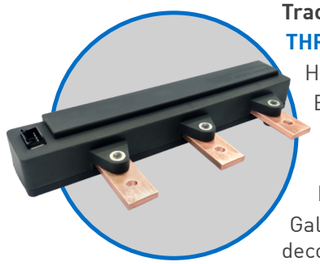
PIHER sensing systems
an Amphenol® company



Current Sensors for DC/DC Converters

SINGLE-PHASE CURRENT SENSORS

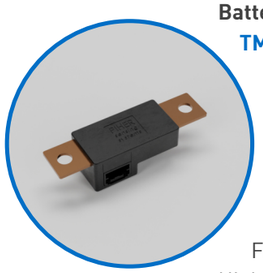
- Busbar mounted open loop sensor
- Simple or dual analog ratiometric output
- Measured current value from ±200 A to ±1.500 A
- Galvanic separation between power and control
- High accuracy and fast response time
- UL94V0 plastic housing material



Traction Inverter

THREE-PHASE CURRENT SENSORS

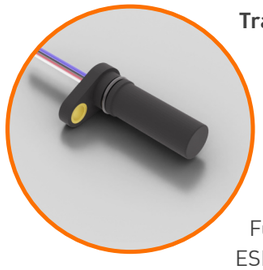
- Hall effect and TMR technology
- Busbar mounted three-phase open loop sensor
- Measured current values from ±800 A to ±1.500 A
- Full compatibility with Infineon HybridPack
- Press fit contacts to eliminate soldering
- Galvanic insulation, lower power losses & thermal decoupling from the system



Battery Management System & Power Electronics

TMR CURRENT SENSORS

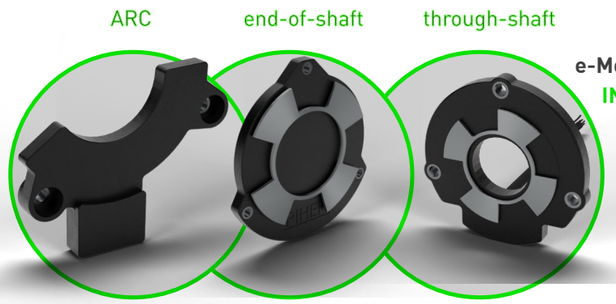
- Galvanic insulation, lower power losses & thermal decoupling from the system
- Fastening ready, integrated busbar sensor
- Low thermal drift over wide temperature range
- Measured current values from ±30A up to ±4.000A
- Immune to common mode fields
- Frequency bandwidth up to 1Mhz
- Higher accuracy levels within galvanic insulated sensors



Transmission Gear Speed

SPEED AND DIRECTION SENSORS

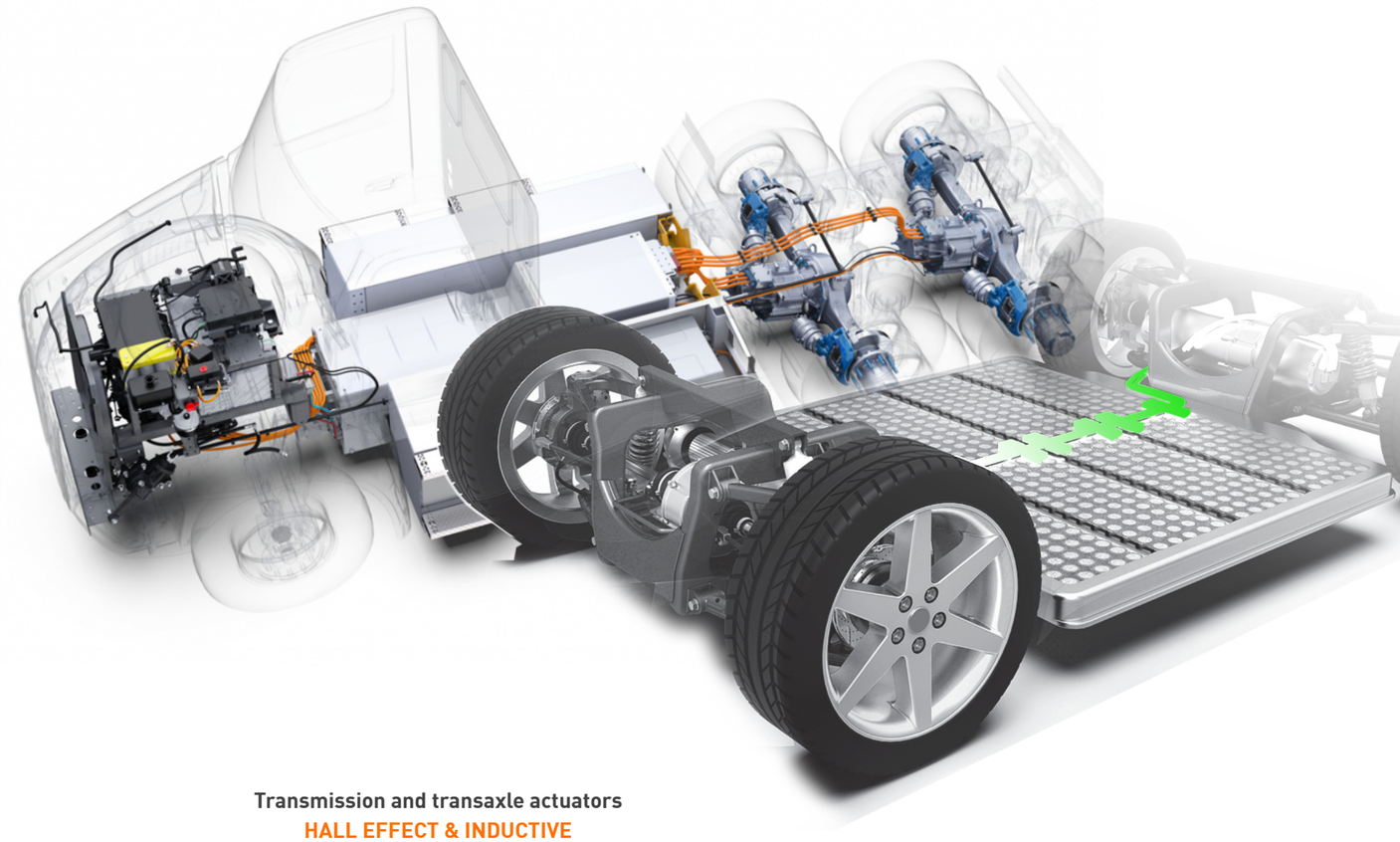
- Fast and near zero speed sensing capable
- Compact and rugged for automotive applications
- Resistant to moist and high vibration environments such as engines, transmissions and brakes
- 3 and 4 pins configurations with custom cable or connector interface
- Functional Safety rated from ASIL-A to C
- ESD protection



e-Motor Control

INDUCTIVE E-MOTOR ROTOR POSITION SENSORS

- Demodulated sine-cosine output / no converter needed
- Immune to magnetic strayfields
- Lightweight and compact compared to resolvers
- Functional safety (up to ASIL-D) on sensor level
- Made for harsh environments

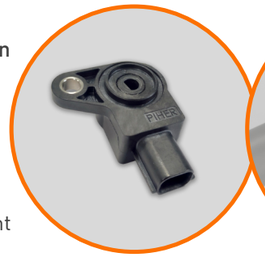


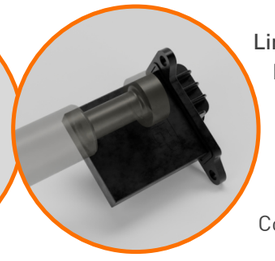
Transmission and transaxle actuators

HALL EFFECT & INDUCTIVE

Angular rotation position sensing

- Measuring rotary movements starting from extreme narrow angles
- Fully sealed and resistant to high temperatures and vibrations
- Immune to magnetic stray fields option available
- ASIL qualifiable (up to level D)
- Non-contact measurement





Linear rail position sensing

- Fully sealed and resistant to high temperatures and vibrations
- Immune to magnetic stray fields option available
- From 1mm up to 800mm linear stroke
- ASIL qualifiable (up to level D)
- Non-contact measurement
- Compact and low profile