

Single-Turn 45 mm Inductive Position Sensor Encoder Enables Reliable Operation Near Electric Motors, Combines 16-Bit Resolution, Repeatability of ≥ 14 Bits, and Rotation Speeds to 10 000 rpm in a Compact, Lightweight Design

Product Benefits:

- Not sensitive to external magnetic fields, moisture, and airborne pollution
- Robust against vibration, mechanical shock, and changes in temperature
- 16-bit resolution
- Repeatability of ≥ 14 bits
- Absolute accuracy of ≥ 10 bits (0.35°)
- Rotation speeds up to 10 000 rpm
- Single-turn device
- Compact, lightweight design:
 - 45 mm diameter
 - Thickness of 6.6 mm
 - Weighs approximately 13 g, including a rotor weighing just 4.3 g for very low inertia
- Off-axis design for hollow shaft mounting
- Useful electrical angle of 360°
- Wide temperature range of -40°C to $+125^\circ\text{C}$
- SPI output, with Sin / Cos output available on request
- RoHS-compliant



Market Applications:

- Position sensing for industrial robotics, motor drives, conveyor belt control, and automated guided vehicles, as well as off-road vehicles and agricultural equipment
- Pitch and yaw position control in windmills
- Wheel position control in cleaning robots
- Actuator position control in solar panels, hospital beds and surgical tables, drones, and missile launchers

The News:

Vishay Intertechnology introduces a new medium precision position sensor built on inductive technology for industrial applications.

- Compared to solutions based on magnetic technology, the RAIK045I MP absolute inductive kit encoder is immune to external magnetic fields, allowing it to be used close to electric motors
- Designed as a cost-effective alternative to higher performance encoder solutions



The Key Specifications:

- Resolution: 16 bits
- Repeatability: ≥ 14 bits
- Rotation speeds: up to 10 000 rpm
- Absolute accuracy: ≥ 10 bits (0.35°)
- Mechanical angle: 360°
- Temperature range: -40°C to $+125^\circ\text{C}$
- Output: SPI, Sin / Cos (on request)
- Diameter: 45 mm
- Thickness: 6.6 mm
- Rotor weight: ≤ 4.3 g
- Stator weight: < 9.0 g

Availability:

Samples and production quantities of the RAIK045I MP are available now, with lead times of 16 weeks.

To access the product datasheet on the Vishay Website, go to
<http://www.vishay.com/ppg?32647> (RAIK045I MP)

Contact Information:

THE AMERICAS

Darin Tomita
darin.tomita@vishay.com

Edgardo Menendez
edgardo.menendez@vishay.com

EUROPE

Emmanuel Tarot
emmanuel.tarot@vishay.com

ASIA/PACIFIC

Kevin Guo
kevin.guo@vishay.com