

# Electrically Conductive Seals

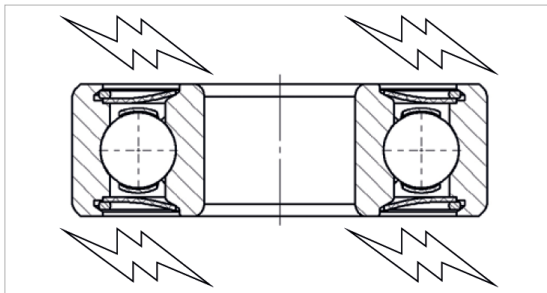


Disruptive electrical discharges found in applications such as electric motors, can cause damage to bearing raceways or disturb signal transmission in encoders. Fast switching frequency converters can account for these discharges, however asymmetrical magnetic flow in the motors and unshielded asymmetrical wires are the two classic causes common in large motors with a low pole pair number, as they have higher magnetic asymmetry than their smaller counterparts.

Disruptive electrical discharges can cause damage not only to the raceways but also to the grease and balls in the bearing.



3D illustration of the bearing.



Section Drawing of the bearing with electrically conductive seal.

There are several general approaches to solving this issue:

- Isolation of the inner and outer ring (e.g. with ceramic balls or coating of the inner or outer ring).
- Brushes on the shaft.
- Targeted conduction of current (e.g. an electrically conductive seal).

In addition to utilising the first approach of using ceramic balls or coating the inner or outer rings, HQW Precision has developed an electrically conductive seal which leads the current directly from the inner ring to the outer ring and vice versa, thus avoiding undesirable capacitor effects.

### Seal Specifications & Advantages:

- Contact seals.
- Minimise raceway damage.
- Minimise signal transcription errors.
- Wear resistance tested on bearing life test rig.

### About HQW Precision

HQW Precision GmbH is a world-class manufacturer of high precision ball bearings, operating from state-of-the-art production and testing facilities at the company's Headquarters in Kürnach, Germany. HQW Precision offers the highest quality, reliability and precision, while still putting customers at the heart of the business. Expert engineering, design and technical services are available, while our dedicated customer service team offer support across all stages of the production process.

For more information on our products or to discuss your bearing requirements, please contact our experienced Sales & Engineering Specialists.