PRODUCTFOCUS

Simmerring® Shaft Seal for Static Discharge

Many traditional radial shaft seals are used in VFD-controlled, AC motors. In some installations, a sufficient charge develops to cause discharge through the motor bearings if the rotor offers no other path to ground. This discharge causes damage in the surface of the bearing race and leads to premature failure of the bearing.

The Simmerring® shaft seal with electrically-conductive, nonwoven fabric eliminates this risk through a fleece ring glued onto the air side of the seal. Because the carbon-fiber PTFE nonwoven material contacts both the rotor and the stator housing, a conductive bridge forms, which grounds the rotor and extends the life of the bearing.

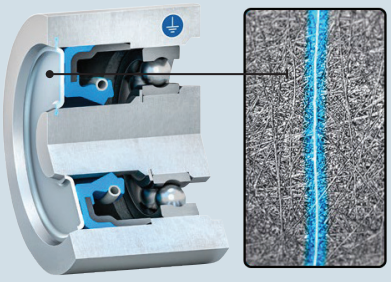
This function eliminates additional grounding components or non-conductive bearings, saving costs. In addition to the conductive bridge, the fleece ring also deters contamination from the primary sealing lip.

SEW-EURODRIVE product compatibility

- Available for DRN... series motor sizes 90 – 225. Sizes 71–80 to follow.

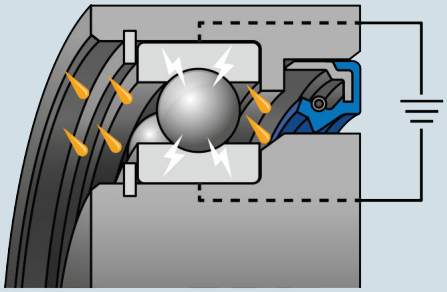
Advantages of the electrically conductive nonwoven material

- Special mechanical properties
- Excellent electrical conductivity (resistance value <10 Ohm)
- Very wide temperature range (–40°C to +250°C)
- Nearly temperature-independent electrical conductivity
- Good air permeability prevents vacuum build up under sealing lip at high speed

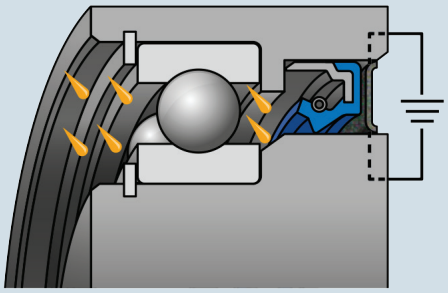


Application example: Low friction seal with electrically conductive nonwoven material

Common conductive characteristics in a bearing system

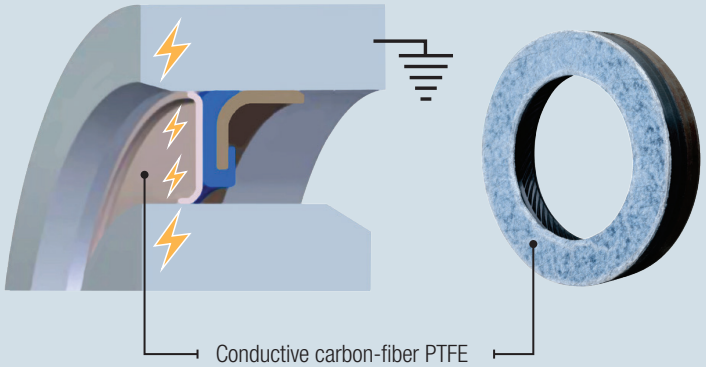


Sealing system without grounding



Simmerring® seal with grounding function

Simmerring® seal installation in an electric motor



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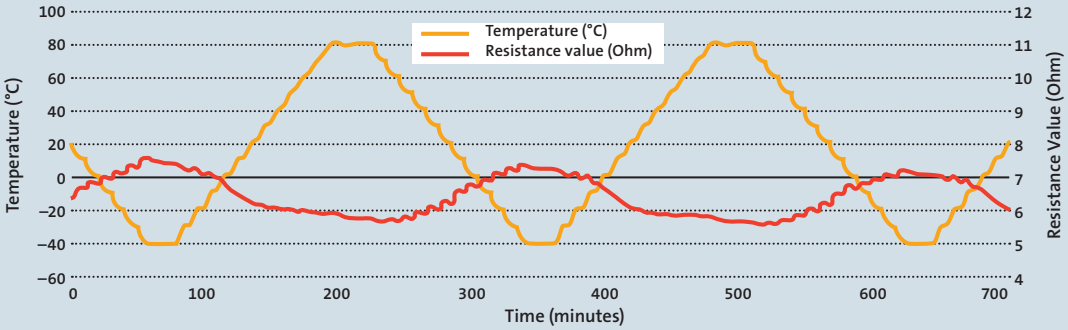
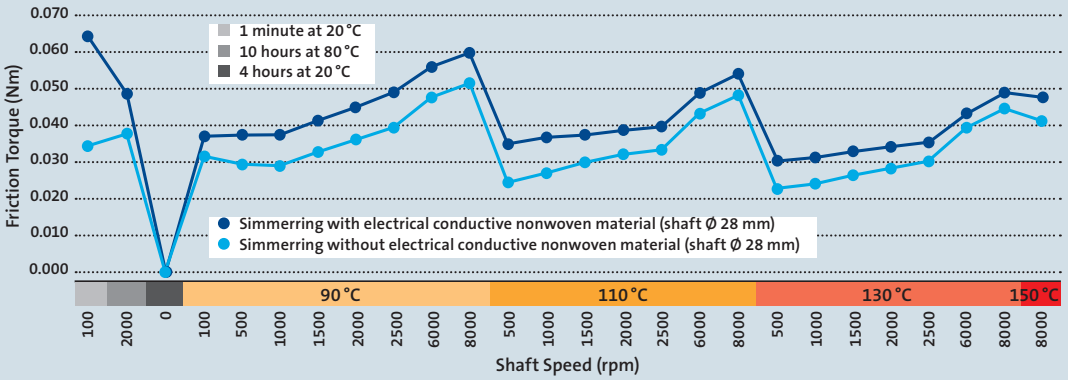
Compare these important features between traditional solutions versus Simmerring with electrically conductive nonwoven material

Benefits	Simmerring® with Electrically Conductive Nonwoven Material	Carbon Brush	Jumper Ring
Costs	+	–	–
Space-saving in the unit	++	––	–
Service life	+	–	–
Conductivity	+	++	++
Contamination due to abrasion of the component and the opposing surface	++	–	–
Friction	++	–	–

Temperature coefficient of the electrically conductive nonwoven material: Constant resistance values over a wide temperature range



Comparison of friction torque: Simmerring® with and without electrically conductive nonwoven material



About SEW-EURODRIVE...

Our product is motion. Our focus is solutions. As a worldwide supplier of innovative gearing, motor, and electronic drive technology, we have been solving problems in large and small applications within virtually every industry since 1931.

Locally in the US, we have 5 assembly centers where we provide final assembly, custom modifications, and assistance with project planning, startup, and training. All products are backed by our industry-leading 24/7 support program.

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