



GE

Wind Turbine **Pitch & Hub Control** Slip Rings

GE 1.X AND 2.X ALL ELECTRIC VERSIONS
OR WITH FIBER OPTIC TECHNOLOGY



www.bgbinnovation.com

Problems with your GE Units?...

- Excessive Dust to Clean
- Breaking Flanges
- Long Leadtimes
- Changing Brush Gear Every Year Or More
- Oil Ingress
- Vibration Causing Pitch Faults
- Brush Grades Seem Soft & Wear Fast
- Bearing Failures
- Power Surge Issues
- Excessive Reboot Lag Times

Resulting in...

CLIMBING towers too much & adding safety risks
Turbine **DOWNTIME**
Increased dept. **COSTS**

BGB Upgrade Solutions

- Qualified **GE** supplier
- Meets and **Exceeds** all GE specifications
- Available in all variants – ESS and NON-ESS
- Low maintenance
- Silver Graphite brushes mean less dust
- Up to 8 year brush wear life on average
- Incorporates engineering experience & design from our successful Vestas units
- Made in the USA with spare parts and brushes readily available



GE Mandated Successful Tests:

Tested in 60C (140F) environment for over 24 hours at full current

Tested down to -40C

Simulation Test having 250LBS technician stepping on the unit 80 times

Overload current testing as high as 135 AMPS

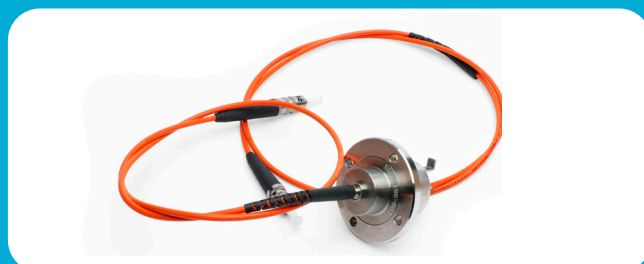
Tested with high grade specialized grease that performs well with low RPM's & minimizes bearing wear

Data Tested showing 92+ mbps data communication rate, better than a 1 in 100'000 BER test

Vibration tested aggressively at 7.8G's for 24 hours following both MIL STD 810 and GE vibration spectrum data inside the nacelle

BGB Fiber Optic (FORJ) Retrofit Unit Advantages:

- Elimination of Electrical Interferences
- Higher Speed Data Transfer Saves Time
 - Faster Reboots & Immediate Communications After Power Up
- Not Influenced By Vibration, Humidity or Heat
- Unlimited Bandwidth Capability



BGB Pitch Control Slip Ring



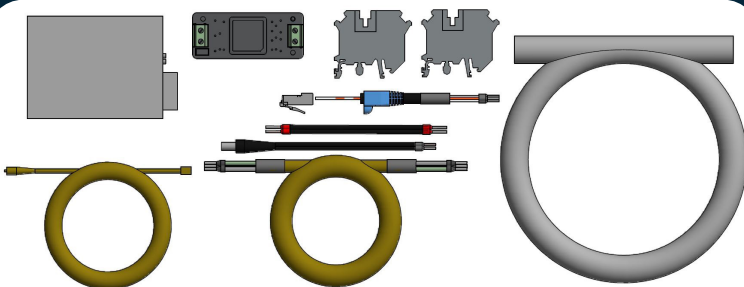
Did You Know?

Power and Data Channels use Silver Graphite Brushes (not Copper), resulting in:

**Less Debris, Less Ring Wear,
Less Noise, Lower Running
Temperature
&
Higher Conductivity**

INSTALLATION EASE

Retrofit Kit supplied with GA100299 provides all that is needed to connect the hub media converter



Specification:

Weight:	<i>65 lbs</i>
Brush Material:	<i>Silver Graphite</i>
Data Ring Material:	<i>Silver-plated Bronze</i>
Slip Ring Life:	<i>100M Revolutions</i>
Lubrication:	<i>None</i>
Cleaning Period:	<i>Optional annual cleaning to extend brush life to 8+ years</i>
Power Circuit Rating:	<i>Upto 100Amps</i>
Data Lines:	<i>100Mbps</i>
Operating Temp:	<i>-40C to +80C</i>
Optional Heating Element:	<i>Cold-Weather Installs</i>
Sealing:	<i>IP54</i>



GE Variations

<u>BGB part</u>	<u>Description</u>	<u>GE Platform</u>
GA100196	25 WAY 400V 100A	2X
GA100135	20 WAY 400V 100A	2X
GA100170	15 WAY 400V 100A FORJ & FEET	3X
GA100231	15 WAY 400V 100A FORJ	2X
GA100294	30 WAY 690V 30A ESS	1.5
GA100299	15 WAY WITH FORJ & MEDIA CONVERTERS	1X/2X



Repairing or Replacing Parts?

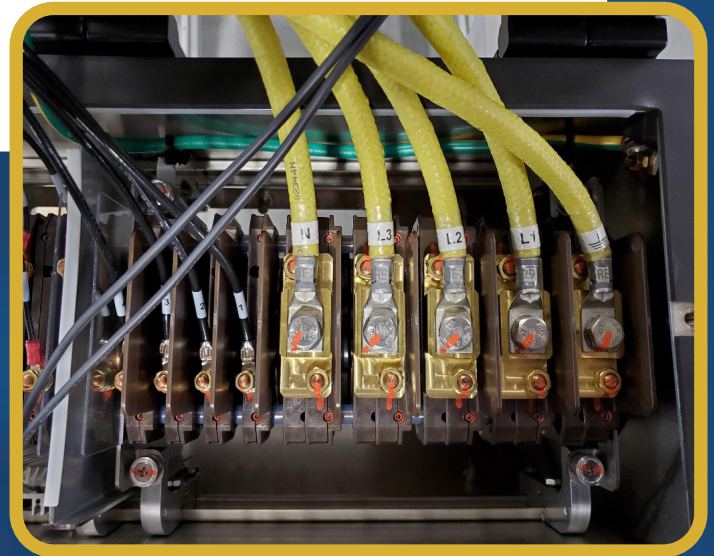
Spare Parts for our GE units such as brush rails and cables are **stocked by BGB** and can be easily replaced.

BGB Repairs every make and model of Pitch Slip Rings, by typically upgrading the unit with plated rings, brush blocks, new wiring, bearings, seals & torque arms.

All repair units come with a warranty and are fully tested in our QC lab. This helps with your company's sustainable efforts by reducing waste and recovery of materials. Read more on how BGB is committing to the *Circular Economy* at www.bgbinnovation.com.

Fixing units yourself?

BGB offers user friendly repair kits and spare parts to help your engineers work more efficiently and effectively.





PROVIDING ENGINEERING SOLUTIONS SINCE 1976



North & South America

Tel: +1 804 451 5211

Europe And Rest Of World

Tel: +44 (0) 1476 576 280

WWW.BGBINNOVATION.COM

Email: sales@bgbinnovation.com



@bgb_innovation