

# BIoGEORGE™ BG<sub>4</sub> BIOFILM GROWTH DETECTOR



**Structural Integrity**  
Associates, Inc.®

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SI-biofilmgrowth.com





**SYSTEM DESCRIPTION** The **BIoGEORGE BG4** Biofilm Growth Detector system, originally developed for and proven in power plant cooling water systems, monitors biofilm activity on the surface of a stainless steel or titanium probe continuously and in real time. Biofilm formation occurs more rapidly on the probe than on system piping or heat exchanger tubes. As a result, maintaining the probe in a clean condition assures that the pipe work, heat exchangers or other system surfaces are clean. The **BIoGEORGE BG4** system consists of a probe, its integrated electronics, interconnecting cable, display software, a user manual, and product support.



## CONTROLLER SPECIFICATIONS

### Instrument

Dimensions (approximate) .....	5.5 x 4.375 x 1.5 in (140 x 110 x 38 mm)
Weight (approximate) .....	1 lb (0.5kg)
Power Supply.....	5.0 mm DC Power Port or Battery
Battery Type.....	Rechargeable 17.3 Wh, 3.6 V internal lithium ion
Battery Life.....	6-months of continuous operation capable
Display .....	LCD (2 lines, 16 characters)
Interface .....	Menu/Wake/Enter/Up/Down/Power on/off buttons
Indicators .....	Six Status LEDs
Storage Temperature.....	0°-150°F (-18°-66°C)
Operating Temperature.....	10°-120°F (-12°-49°C)
Humidity .....	0-80% relative
Noise Level .....	<65 dBA

### Electrical requirements

United States.....	AC/DC adapter with 5.0 mm DC Power Port compatible with standard 110 volt/60 Hz, AC
Europe .....	240 V/50 Hz power supplies.
North America, Europe, United Kingdom, Australia & China.....	Interchangeable power plug
Output .....	5V, 3A
Output Current Range (from probe).....	+/-20 µA (Internal Resolution = 0.01 µA)
Output Voltage Range (to probe).....	0-500 mV (Internal Resolution = 0.1 mV)

Connectivity.....	Bluetooth, Ethernet, USB-B mini, USB-A and 4-20 mA analog
Memory .....	6 months
Calibration .....	Not required

## PROBE SPECIFICATIONS

Electrodes.....	Type 316L stainless steel for fresh water environments; Ti, Gr. 2 for saline environments
Attachment .....	Standard, threaded pipe plug (stainless steel or PVC; 1" or 2" NPT body).

*Specialized probe configurations, such as flow-through or flush mounted probes, probes on a retrievable body or other custom designs available.*

### Mounting

*Electrode stack projects into the system to be monitored. Coupon racks, dedicated threaded ports in heat exchangers, other access points acceptable.*

*Mounting in any position is acceptable*

Limiting Pressure.....	3000 psig for stainless steel probe bodies; 300 psig for PVC bodies
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Recommended Operating Temperature .....	PVC Body 50°-120°F (10°-49°C)
	Stainless Steel Body 50°-130°F (10 -54°C)

*Suitable for outdoor installations*

*Standard 50' data cable with 6-pin connection linking the BIoGEORGE probe sensor to the BG4 controller*

## ENVIRONMENTS

All aqueous environments

- High purity/controlled purity water
- Fresh waters (hard and soft)
- Brackish waters
- Seawater
- Most brines
- Contaminants such as oil can be accommodated

Fluid velocity past the probe should be typical of that of metal surfaces in the system; no special adjustments for flow are required (e.g., BG4 can monitor normally stagnant or intermittently flowing systems)

Probe must be continuously wetted

Compatible with water treatment chemicals including biocides, deposit control agents, corrosion inhibitors, and most on-line cleaning solutions.

## COMMUNICATIONS

BGConnect Utility software compatible with Microsoft Windows 7, 8 and 10 for local (wired) and network connections.

Bluetooth connectivity with Phone/Tablet App for iOS and Android operating systems

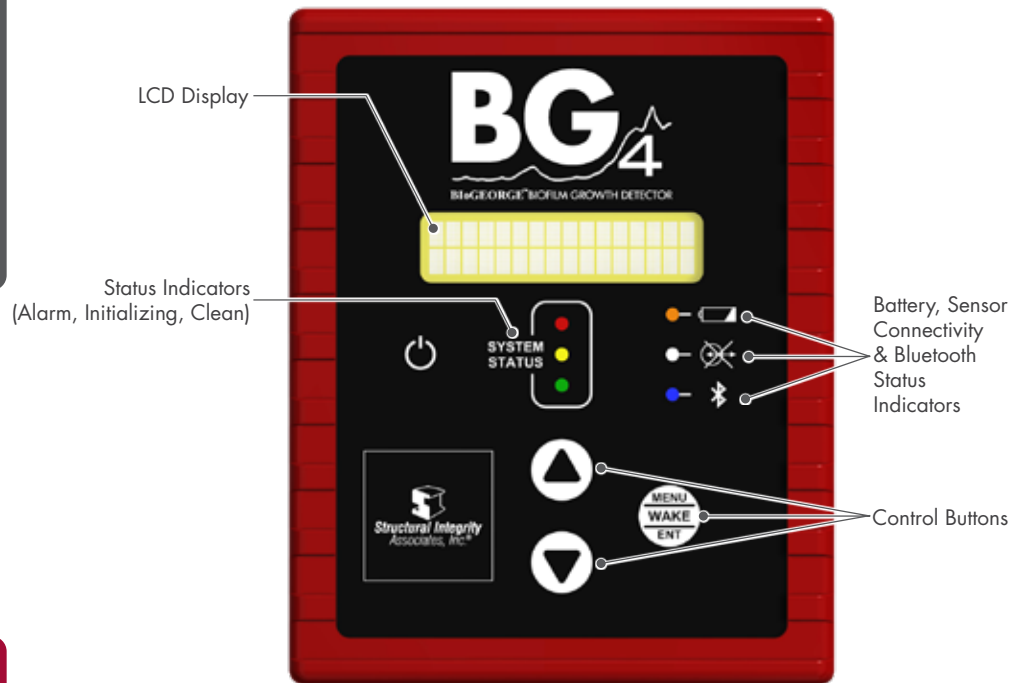
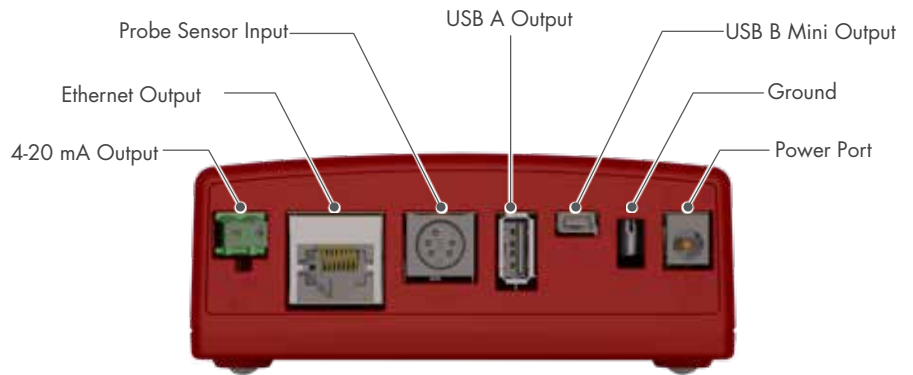
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The **BIoGEORGE™ BG4** biofilm growth detection system is a modern approach to monitor the **EFFECTIVENESS** of a biocide treatment program to ensure sufficient application of biocide for system cleanliness.

Mitigate MIC  
Through Real Time  
Biofilm Monitoring

Reduce Thermal  
Fouling by  
Controlling Biofilms

Optimize Biocide  
Treatment Programs



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