Watlow’s Closed Loop Integrated Controller Provides Long-Term Reliability

Many applications that require a fixed temperature set point incorporate a mechanical thermostat for thermal control. Thermostats have proven, however, to be inadequate for many applications due to their inability to provide optimum temperature controller and meet long-term reliability requirements, such as a 100,000 cycle rating.

The SERIES EGH® thermal solution includes a compact temperature control, thermocouple sensor and power switching device integrated with the heater’s power cord. The SERIES EHG solution reduces system costs and increases reliability while providing substantially longer life than a conventional thermostat.

The small thermocouple mass provides superior response to changes in process temperature enabling higher watt density silicone rubber heater designs. The integrated, custom set point temperature controller offers a long life span and allows a thermal system design that delivers faster heat up rates and improved accuracy. The SERIES EHG System has been tested to over four million cycles at rated amperage. Depending on the application, Watlow’s power switching design can last up to 40 times longer than a conventional thermostat.

Features and Benefits

Watlow power switching design and components
- Enable power switching devices to last up to 40 times longer than a conventional thermostat
- Lowers cost of ownership
- Improves system reliability

Tight temperature control
- Ensures process accuracy

Small sensor footprint
- Fits with almost any heater
- Responds quickly to temperature changes
- Controls high watt densities in low mass applications

Single controller configuration with multiple heaters
- Creates Host/Remote configurations up to 10 amps
- Offers the smallest in-line 10 amp temperature control available
- Reduces system costs

Pre-wired, in line control
- Simplifies installation
- Provides two-wire power connection

Durable housing with built-in strain relief
- Protects electronics
- Ensures a low risk of mechanical damage

Typical Applications
- Semiconductor processing
- Aerospace composite repair
- Foodservice equipment
- Freeze protection
- Life sciences
- Telecommunications

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**Technical Data**

**Specifications**

**Operational**
- SERIES EHG silicone rubber heater solution is UL® recognized to 428°F (220°C) operating temperature
- Factory programmed fixed set point
- On-off controller with 6°F (3°C) switching hysteresis
- Temperature band LED indicator ON between -68 and +68°F (~20 and +20°C) of set point

**Electrical**
- Voltage rating: 120 or 240VAC – 30/+10%, 50/60Hz
- Silicone rubber heater watt densities up to 80 W/in² (12.5 W/cm²) dependent on application temperature
- SERIES EHG system UL® recognized to 10A max.

**Sensor**
- Type K thermocouple

**Mechanical**
- Controller dimensions 3.75 in. (95 mm) long by 1.75 in. (45 mm) diameter
- Heater per silicone rubber heater specifications

**Agencies**
- Silicone rubber heater: UL® recognized File #E52951
- SERIES EHG controller: TUV File DE 3-3068 to EN 61010-1:2001, UL® File E43684 to UL® 873 temperature indicating and regulating equipment

**Environmental**
- Controller operating temperature range 32 to 128°F (0 to 70°C)
- Controller storage temperature range -40 to 158°F (~40 to 70°C)

Contact a Watlow representative for custom configurations.

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**Integrated SERIES EHG System Versus Integrated Thermostat System**

| Life comparison at rated amperage | Tested to greater than 4,000,000 cycles with 10A load | Rated 100,000 cycles | Longer product life of SERIES EHG system and high reliability in application |
| Switch hysteresis | 6°F (3°C) | 15°F (8°C) | SERIES EHG system will provide superior process control |
| Improved response time reduces overshoot on start-up | 6°F (3°C) typical | 25°F (14°C) typical | SERIES EHG system will respond to changes in temperature faster than thermostat |
| Warranty | 2 years on material and workmanship | 1 year on material and workmanship | Warranty can be extended because of superior SERIES EHG life |
| Zero cross switching | SERIES EHG has zero cross switching | Random switching during sign wave cycle | Reduces possibility of electrical mechanical interference (EMI) |

Watlow® and SERIES EHG® are registered trademarks of Watlow Electric Manufacturing Company. UL® is a registered trademark of Underwriter’s Laboratories, Inc.

**To be automatically connected to the nearest North American Technical Sales Office:**
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