



## Watlow's Closed Loop Integrated Controller Provides Long-Term Reliability

Many applications requiring a fixed temperature set point rely on a mechanical thermostat for thermal control. Thermostats have proven, however, to be inadequate for many applications due to long-term reliability issues, such as 100,000 cycle rating and poor temperature control.

The SERIES EHG® thermal solution includes a compact temperature control, thermocouple sensor and power switching device integrated into the heater's power cord. The SERIES EHG reduces system costs and lasts substantially longer than a conventional thermostat solution.

The evolution of miniature microprocessor technology and Watlow® switching technology fostered development of a small, versatile temperature control and thermocouple sensor that is integrated with Watlow silicone rubber heater products. This device senses the temperature via input from a thermocouple strategically placed on the heater mat. The microprocessor is programmed prior to shipment with an application specific set point. This results in quick delivery of a custom, integrated system.

The small thermocouple mass provides superior response to changes in process temperature enabling higher watt density silicone rubber heater designs. These features offer an integrated custom set point temperature controller with superior life span, 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

#### Long operational life

- 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

#### Reduced system cost

- A single EHG control can be configured with multiple heaters

#### Pre-wired, in line control

- Simplifies installation
- Two wire power connection

#### Durable housing with built-in strain relief

- Protects electronics
- Low risk of mechanical damage

#### Manufactured with proven Watlow components

- Assures reliable system performance

### Typical Applications

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

## 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/in<sup>2</sup> (12.5 W/cm<sup>2</sup>) 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

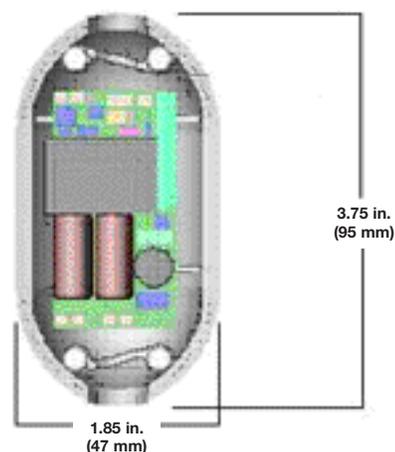
- Silicone rubber heater: UL® recognized File #E52951
- SERIES EHG controller: TUV File DE 3-3068 to EN 61010-1:2001, UL® File E43684 to UL® 873 temperature indicating and regulating equipment

### Environmental

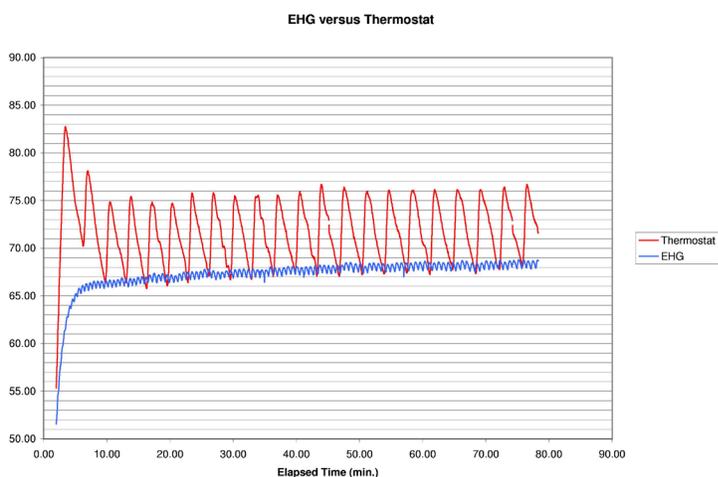
- Controller operating temperature range 32 to 158°F (0 to 70°C)
- Controller storage temperature range -40 to 158°F (-40 to 70°C)

Contact a Watlow representative for custom configurations.

## Dimensions



## SERIES EHG Versus Thermostat (typical application)



## Integrated SERIES EHG System Versus Integrated Thermostat System

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

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**1-800-WATLOW2 • www.watlow.com**  
**inquiry@watlow.com**

### International Technical Sales Offices:

<b>Austria</b>	+43 6244 20129 0	<b>India</b>	+91 40 6661 2700
<b>China</b>	+86 21 3532 8532	<b>Italy</b>	+39 02 458 8841
<b>France</b>	+33 1 41 32 79 70	<b>Japan</b>	+81 3 3518 6630
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<b>Mexico</b>	+52 442 256 2200
<b>Singapore</b>	+65 6773 9488
<b>Spain</b>	+34 91 675 1292
<b>Taiwan</b>	+886 7 288 5168
<b>UK</b>	+44 115 964 0777