

## 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 EHG® 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.

### Typical Applications

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



### 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

## 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/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

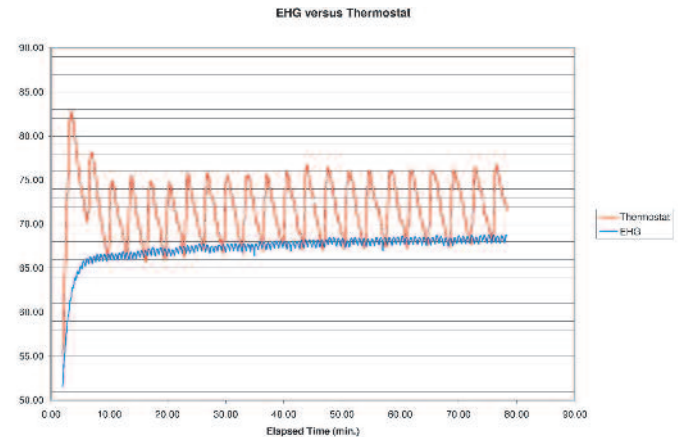
- Silicone rubber heater: UL® recognized File #E52951
- SERIES EHG controller: TUV File DE 3-3068 to EN 61010-1:2001, UL® File E43684 to UL® 873 temperature indicating and regulating equipment

#### Environmental

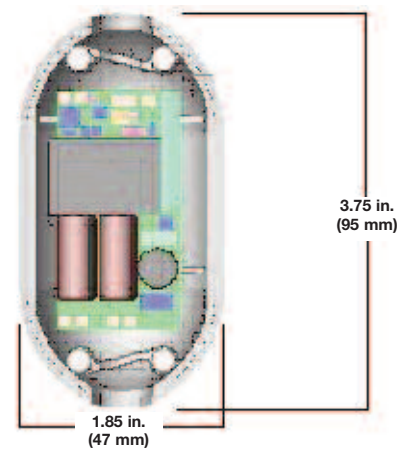
- Controller operating temperature range 32 to 128°F (0 to 70°C)
- Controller storage temperature range -40 to 158°F (-40 to 70°C)

Contact a Watlow representative for custom configurations.

### SERIES EHG Versus Thermostat (typical application)



### Dimensions



### Integrated SERIES EHG System Versus Integrated Thermostat System

	Integrated EHG System	Integrated Thermostat System	SERIES EHG Benefit
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)

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