



Tools for Scientists®



Custom Heating & Controls



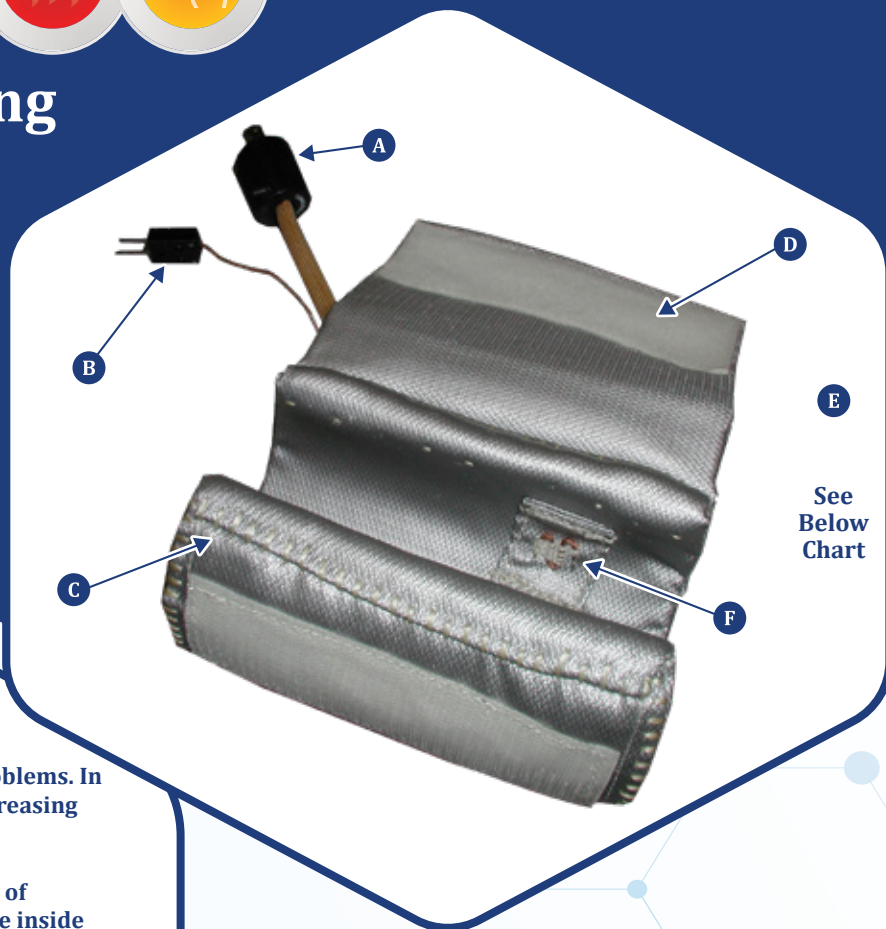
Glas-Col®

Tools for Scientists®

www.glascol.com



Custom Heating & Controls



See
Below
Chart

Features:

Our jackets provide a solution to heating or heat loss problems. In addition, the jackets insulate as well as heat, thereby increasing convenience and operating safety.

GF Silicone Construction: Jackets designed with this type of material have an operating temperature up to **200°C**. The inside and outside materials are silicone coated fiberglass and have been accepted for clean room applications. Insulation thickness 1/2" to 1". Watt density up to 1.5 w/sq-in.

GF Construction: These jackets are designed with materials that have an operating temperature up to **400°C**. The inside material is fiberglass fabric and the outside is silicone coated fiberglass fabric. Insulation thickness 1/2" to 1". Watt density up to 5 w/sq-in.

QF Construction: These jackets are designed with materials that have an operating temperature up to **600°C**. The inside material is a quartz fabric and the outside material is fiberglass fabric. Insulation thickness 1" to 2". Watt density up to 12 w/sq-in. Whether you need high-temperatures, close fit, efficient heating/insulating, Glas-Col jackets are your solution. Glas-Col jackets provide solutions for pipes, valves, tanks, regulators, vacuum equipment and many other items.

Glas-Col is committed to customer satisfaction. We will work quickly to provide a written quote based on a simple hand sketch or a formal computer drawing. In some areas, representatives are available to measure your system, thus providing you with even less work on your path to efficient heating.

- A - Termination:** 2-wire twist lock device, cold leads or flexible conduit.
- B - Thermocouple mini-plug**
- C - Interior and exterior fabric depends on application:** thickness available 1/2" up to 2".
- D - High Temperature Velcro® Flap Closure (Typical).**
- E - Other common closures:** Hooks & Lace / Eyelets & Lace
- F - Thermocouple Sensor tip. Common Types:** J, K or T.

Glas-Col offers several types of jacket construction for different operating temperatures.



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Examples of our
Custom Offering:

**Aluminum
Housed Mantle, Chemical
resistant coating available**



Valve Jacket



**Large Tank
Heater**



**Vacuum
Chamber**

**Round Bottom
Heater**



**Hook & Lace
Closure**



Flex Conduit



Custom Heating & Controls

Process & Limit control in industrial box with outputs and switches in side.

Custom Controls

General:

If your heating process requires basic control or several steps, Glas-Col has the control for you. We offer bench-top or custom designed industrial systems with features like Ramp/Soak that allows up to a 40-step profile. You can profile Temperature, Time, Hold, Soak and End steps to create the ideal profile for your process. The built in adaptive control technology provides even tighter control for these demanding applications. Several input types are available.

All controls are microprocessor-based, digital indicating, automatic temperature with a single input and a single output for bench-top systems or multiple zones are available for industrial systems. All feature an auto-tuning function that allows automatic setting of control parameters with a minimum of user input required.

We Offer:

- Custom packages to fit your application
- 120/240V single phase; 240/480V 3-phase
- Easy installation and various mounting options
- High-temperature limit controls
- Digital temperature controls
- Secondary alarm outputs, activating visual or audible alarms, or sending a signal to an external device.

Available Features:

1. On/Off power switch.
2. On/Off alarm switch.
3. Load output rated per design.
4. Receptacles or hard wiring.
5. Control PID with Auto-tune algorithm, solid state relay.
6. Circuit protection (fuse or circuit breaker).
7. Serial communication.
8. Limit Control.
9. Multi-Zone systems.
10. Input: J, K, T or RTD.



Contact our engineering department to design the best control for your heating system.



Process & Limit controls in benchtop chassis with outputs and alarms on back.



Tools for Scientists®

Glas-Col
Tools for Scientists®



Model			
104A PL120	120 Volts	1200 Watts	10 Amps



Standard Controls

PowerTrol:

This control is small in size and can be used to regulate the input voltage of resistive devices by turning the dial knob. Just plug your resistive load into the receptacle on the back, turn on the switch and adjust the dial. The higher the number on the dial, the hotter your load will get. This unit comes with a 6' attached power cord and grid support bracket, which is ideal for fume hood mounting to maximize bench space.

DigiTrol II:

This temperature control displays both the setpoint and process temperature and uses the most modern control technology for the best temperature stability. The Auto-tune feature minimizes setpoint overshoot and learns your process. Changing your setpoint is easily done with the interface keys. The controller can also perform ramp rate operations to allow the user to slowly raise the process temperature. There are several input types available. This unit comes with a 6' detachable power cord, grid support bracket, which is ideal for fume hood mounting to maximize bench space. This control is a microprocessor-based, digital indicating, automatic temperature control with a single input and a single output. It features an auto-tuning function that allows automatic setting of control parameters with a minimum of user input required. Universal input accepts "J", "K", or "T" thermocouples.

The control automatically sets the PID parameters through a "learning" sequence in the auto-tuning mode. PID parameters include proportional band, reset/integral and rate/derivative. User-friendly features include automatic LED indicators to aid in monitoring and setup, as well as dual LED displays for process temperature and set point indication. This control automatically stores all information in a non-volatile memory.



Model			
104A PL612	120 Volts	1800 Watts	15 Amps

Custom Heating & Controls



If your heating process requires several steps, this is the control for you. The Ramp/Soak feature of this control allows up to a 40-step profile, which can be configured from the provided software. You can profile Temperature, Time, Hold, Soak and End steps to create the ideal profile for your process. The built in adaptive control technology provides even tighter control for these demanding applications. Several input types are available. This unit comes with 6' detachable power cord, communication port, audible alarm function and grid support bracket, which is ideal for fume hood mounting to maximize bench space.



Standard Controls

RampTrol:

This control is a microprocessor-based, digital indicating, automatic temperature control with a single input and a single output. It features an auto-tuning function that allows automatic setting of control parameters with a minimum of user input required. Universal input accepts a type "J", "K", or "T" thermocouples.

The control automatically sets the PID parameters through a "learning" sequence in the auto-tuning mode. PID parameters include proportional band, reset/integral and rate/derivative. User-friendly features include automatic LED indicators to aid in monitoring and setup, as well as dual LED displays for process temperature and set point indication. This control automatically stores all information in a non-volatile memory.

Advance PID Temperature Control:

Rear panel output receptacle for direct plug-in of heaters and other resistive devices. Field calibrations help to improve system accuracy by entering the offset value to correct for individual probe error. Simultaneously view both the measured and set point on the display. Temperature scale selectable to read in °F, °C, °K (Kelvin) or °R (Rankin). Display indicates output and alarm conditions. Multiple control modes from simple On/Off control to sophisticated auto-tuning PID control. Non-volatile EEPROM stores setup and operating parameters, even if power is lost. The 120 VAC models include a 6-ft (1.8-m) power cord and US standard plug and receptacle (NEMA 5-15; 240 VAC models a 6-ft (1.8-m) power cord and US standard plug and receptacle (NEMA 6-15).

Two control modes---On/Off or PID for more accurate control. This temperature control can be used for a wide variety of applications and provides excellent control accuracy and power capabilities, making it great for pilot process plants, R & D labs or OEM requirements.

Model			
104A PL912	120 Volts	1800 Watts	15 Amps



Models			
104A TC1800	120 Volts	1800 Watts	15 Amps
104A TC 2400	240 Volts	2400 Watts	10 Amps

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Glas-Col makes the most inclusive offering of standard heating mantles available for several types of glassware and metal containers. Please visit our website for a complete selection.

Company History: In 1939 Glas-Col's founder, Dr. Glen H. Morey, was a research chemist at Commercial Solvents Corporation in Terre Haute, IN. A sudden fire burst out in the Commercial Solvents lab when a gas burner heating an oil bath ignited vapors from a shattered flask of acetone dropped several feet away. Dr. Morey was injured in that fire, and it convinced him lab workers needed a new method for heating flasks, one that would eliminate the hazard of open flame burners and electric heaters with exposed coils. Dr. Morey and his wife Ruth developed a heating device with electric resistance wires woven into a fiberglass cloth sheath and named their new invention a "heating mantle".

Today Glas-Col still manufactures heating mantles along with custom heating jackets for the chemical process, semiconductor and industrial markets.

www.glascol.com

HEATING JACKET DATA FOR QUOTATIONS

Company: _____

Address: _____

Attention: _____

Phone/Fax: _____ E-mail: _____

Equipment Dimensions (submit sketch if required): _____

Equipment Material: _____

Material (if any): _____ Specific Heat: _____ BTU/lb-°F Density: _____ lb/ft³

Flow rate: _____

Ambient Temperature: _____ °C

1. Heat from _____ °C to _____ °C in _____ hours

2. Maintain at _____ °C

Closure: Velcro hooks & laces eyelets and laces

CE mark required: Yes No

CSA mark required: Yes No

Insulation Thickness (1/2" and up, in 1/2" increments): _____" Glas-Col to recommend

Location of jacket: Indoor Outdoor

Temperature Control: Customer to furnish

Custom (wall-mounted) - Specify details below

Standard (desktop-mounted) digital control w/ Universal thermocouple jack

Thermocouple: None Type J Type K Type T

Termination: Straight leads 2-wire Twistlock Device Flexible Conduit

Voltage: _____ V _____ PH
(100V to 480V; 3PH)



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