

THERMOELECTRIC MODULE CONTROLLER

1KW Output Power with
.01°C Temperature Resolution

Features:

Full H-Bridge Control
Fully PC Programmable
P,I,D or On/Off Control Function
PC Configurable Alarm Circuit
RS232 and RS485 Communication Ports
Set Temperature range of -40°C to 200°C



Model 5C7-582
\$379.00

Accessories:

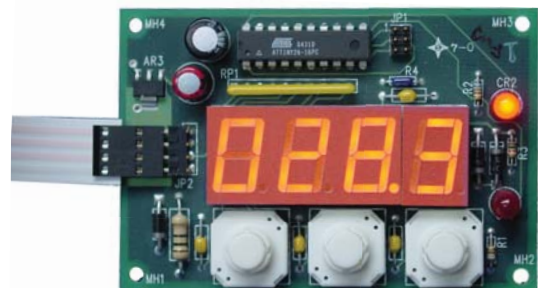
Model 5C7-584 Display: 4 Digit temperature readout for displaying and setting temperature. \$125.00 Each

Model 5C7-583 Client: Provides an additional 700 Watts of output power per controller. An additional 32 clients may be connected to the server. \$250.00 Each

Specifications:

Input Voltage: 9VDC to 36VDC
Load Current: 0.12 to 28 Amps
Temperature Resolution: .01°C
PID Functions:
 Bandwidth: 1°C to 20°C
 Integral: 0.0 to 5 repeats per minute
 Derivative: 0.0 to 5
PWM base frequency: 2.7 KHz
Ambient Temperature Range: 0°C to 70°C
Power Dissipation: 18.0 Watts
H-Bridge Voltage Drop:
Output Power Resolution: 0.19%
Control Stability: ±0.01°C

Optional Display



Model 5C7-584
\$125.00



OVEN industries

Mechanicsburg, PA
Tel: 1-877-766-OVEN
email: oven@ovenind.com
www.ovenind.com

Product Description

Model 5C7-582 is a bi-directional, H bridge, thermoelectric module temperature controller. This controller provides for both heating and cooling with a seamless transition. A load circuit power of up to ONE KW is standard.

The controller accepts an input voltage of 9 VDC to 36 VDC. A thermistor sensor is used to monitor the temperature being controlled over a range of -40°C to 200°C depending on the sensor chosen. The temperature can be set through a PC, an optional display (model 5C7-584) or a remote potentiometer.

The H-bridge configuration allows for a seamless transition between heating and cooling. Using a PC and an RS232 interface, the controller can be configured for any combination of PID control, On/Off control, differential temperature control or manual output control. The user friendly communications software requires no programming experience to set up the controller. The RS232 interface has 1500 VAC isolation from all other electronic circuitry minimizing the interference from noise or errant signals. This communications link permits a variety of operational mode configurations. Field selectable parameters or data acquisition in a half-duplex mode can be performed. Once the controller is set up, the computer may be disconnected and the controller becomes a stand-alone unit.

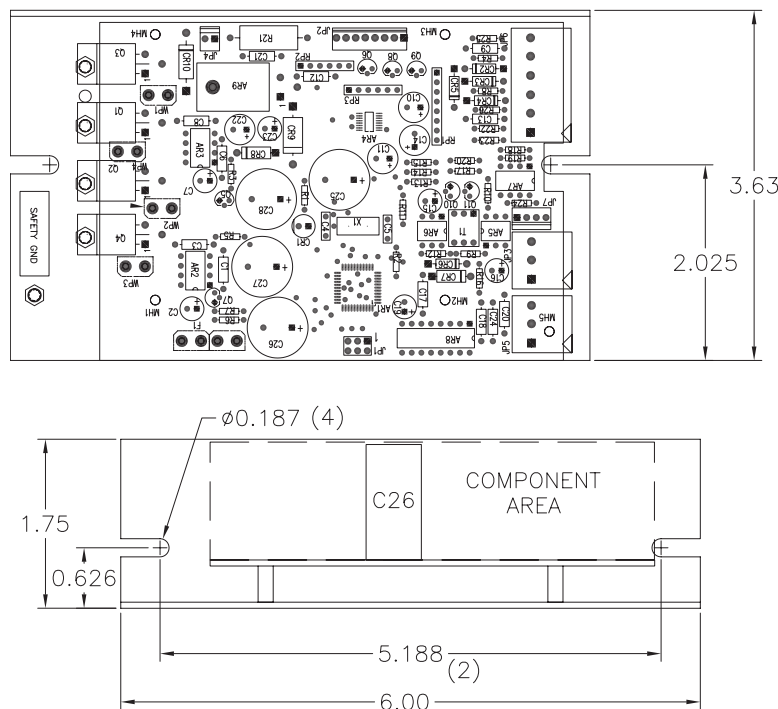
In addition to the RS232 communication port, this controller has two RS485 communication ports for the connection of the optional display (5C7-584) which is connected with a 0.100 centerline pin header and for the connection of client controllers (5C7-583) which are connected via a screw type terminal block. Through the RS485 interface, up to 32 additional controllers of 700 Watts each may be connected as clients to this server.

The PC software also provides for several alarm types to be selected, which provide a 5VDC output, rated for 25 MA of current. In the set up menu, the alarm function may be set as no alarm, tracking alarm, fixed value alarm or computer controlled alarm. The menu also offers selections for latching and for maintaining or cutting the power during an alarm. The alarm sensor may be the control temperature sensor or a secondary sensor.

The load circuit is pulse width modulated at 2.7KHz and delivers a load of .12 to 28 Amps. Temperature resolution for this controller is $.01^{\circ}\text{C}$, providing end point control up to $\pm 0.01^{\circ}\text{C}$ in a well designed thermal system. The internal power dissipation is 18 Watts under full load.

Mechanically, the control board is mounted to a metal bracket that is suitable for either horizontal or vertical mounting. Input and output connections are accessible via screw type terminals, fast-on terminals and 0.100 center connectors. The approximate dimensions are 6" by 3.6" by 1.75".

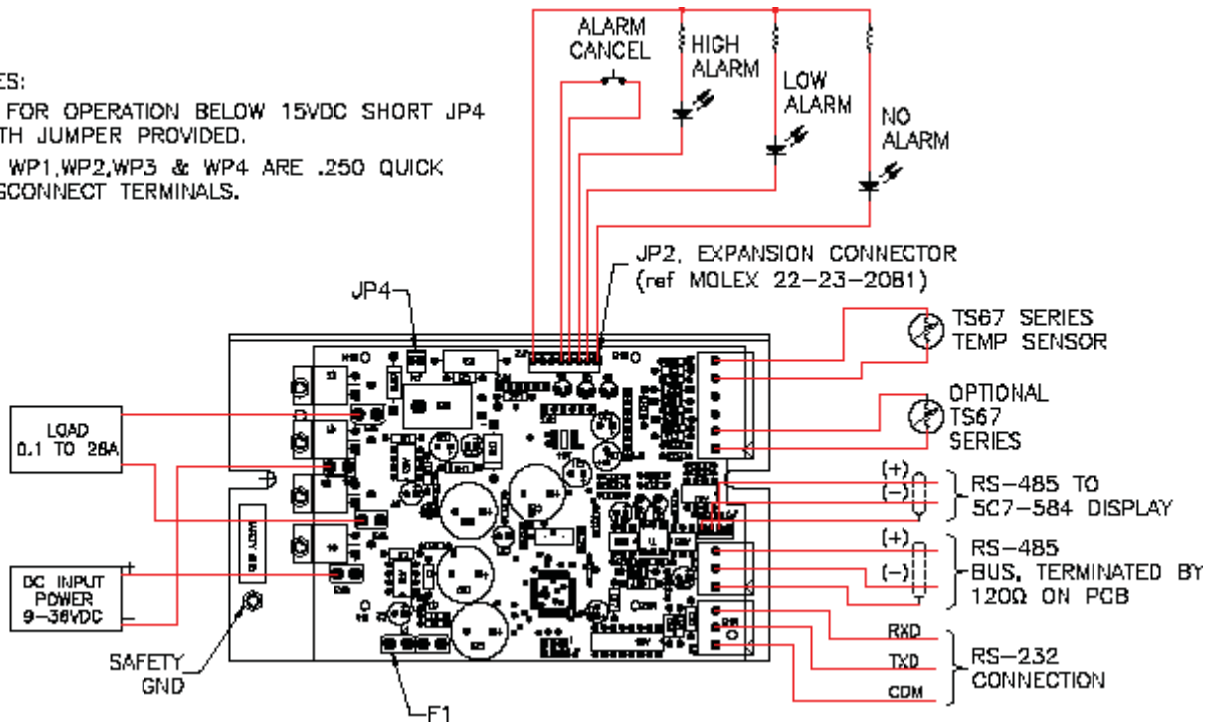
Mechanical Package Model 5C7-582 and Model 5C7-583



Model 5C7-582 Hook-Up Detail

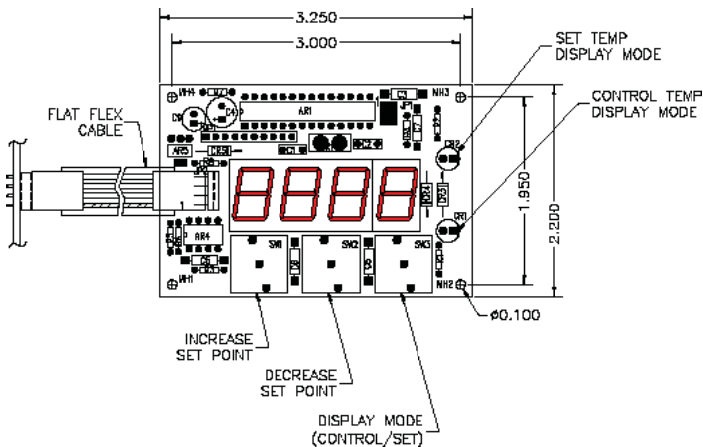
NOTES:

1. FOR OPERATION BELOW 15VDC SHORT JP4 WITH JUMPER PROVIDED.
2. WP1, WP2, WP3 & WP4 ARE .250 QUICK DISCONNECT TERMINALS.



Model 5C7-584 Display

Mechanical Package



The model 5C7-584 display is a 4-digit display, which has a minimum temperature display resolution of 0.1° . Using the switches on the display, the set point of the controller may be changed. Switch 1 increases the temperature, switch 2 decreases the temperature and switch 3 lets you choose whether the readout displays the control temperature or set temperature. There are two LED's which indicate whether the readout is showing control temperature or set temperature.

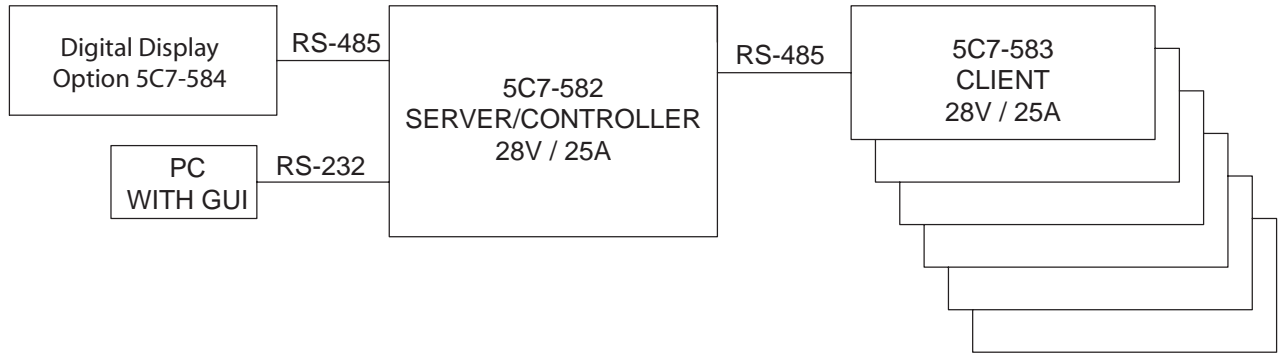
For instance if the temperature is over 100° the readout will have a resolution of 0.1.

The display contains 3 switches:

- (1) Increasing the set point
- (2) Decreasing the set point
- (3) To choose whether to display the set temperature or the control temperature.

Two LED's on the board indicate which mode the display is showing.

Model 5C7-582 Server and Model 5C7-583 Client Information



The 5C7-582 controller can be used to take the input from a single thermistor and control multiple sets of TE modules through the client controllers. Based on the temperature reading, the 5C7-582 will send out the same power level and current direction to all of the clients. By setting up the thermal system this way, much more power is available to control your thermoelectric modules. Each client is a full pulse width modulated H-bridge with 28VDC/25A of available power.

Hook-Up Detail

