

**DESCRIPTION** The C1P is a proportional, infinitely variable power controller capable of delivering 1-98% of the applied line voltage to the directly connected electric heaters. This is accomplished by phase angle firing a TRIAC. The C1P will not control transformers or motors.

**OPERATION** The C1P takes a 4-20mA input signal from a front-end controller and varies the voltage applied to the electric heaters (see "WIRING DIAGRAM"). At 4mA input, the C1P will start applying voltage to the heaters, at 12mA the heaters will have approximately 50% of the line voltage applied to them, and at 20mA, 98% of the line voltage will be applied to the heaters. Increasing the mA signal increases the output voltage. The C1P is a POWER CONTROLLER; it CANNOT create more voltage or current. There is no "tuning" or "tuning adjustments". TROUBLESHOOTING TIP: Overall process control results are set by the dynamic characteristics of the heaters, transfer medium, sensor, and the tuning of the front-end controller, not the power controller

## INSTALLATION



**WARNING: FIRE HAZARD!!** Even the best electronic components CAN FAIL SHORTED, KEEPING FULL POWER ON! Provide a completely SEPARATE (redundant) OVER TEMPERATURE SHUTDOWN MEANS to switch power off if safe temperature is exceeded.



**WARNING: HIGH VOLTAGE!!** This control must be installed in a GROUNDED enclosure by a qualified electrician. Provide a safety interlock on door to remove power before gaining access to device.

**ELECTRICAL CONNECTIONS** See "WIRING DIAGRAM" on back. Check the Avatar serial tag and verify the correct voltage/ ampere ratings and input control signal for your application. Wiring must be performed in accordance with any and all applicable local and national codes. Use a minimum wire size of 12AWG for a 20 amp C1P and a minimum of 10AWG for a 30 amp C1P. For best results keep control signal and power wires separated.

## OPTIONS

**SOFT START:** For use with Tungsten heaters (T-3 Lamps). This option provides a 1 second power ramp up function when a control signal is applied. TRIAC units rated for 10 amps maximum on tungsten loads. For higher current applications use an Avatar SCR power controller with a soft start option.

**VOLTAGE LIMIT:** Use calibration pot to reduce max. output voltage.

**MANUAL CONTROL:** Use Avatar MAP. Isolated Potentiometer.

**LINEAR 0-5 or 0-10 VDC Analog Signal:** Use Avatar MAI.

**WARRANTY** All Avatar Instruments products carry a full five year, from date of purchase, parts and labor warranty against component failure and defects in workmanship. In the event your controller fails to perform properly, **contact Avatar to obtain a return authorization number**. Controllers sent to Avatar for warranty service that have no apparent defect will be treated as a standard repair and a \$50.00 charge will be applied. Avatar will repair or replace any unit that failed due to defective parts or assembly. This warranty DOES NOT cover damage due to shipping, abuse, misapplication or operation beyond specified rating. Furthermore, fuses & improperly fused TRIACs are NOT COVERED by this warranty. Avatar is not responsible for any subsequent or other damage experienced in use of this device.



NRNT FILE # E350716

Avatar Instruments, Inc.  
Phone: (302) 703-6865

16587 Coastal Highway  
Fax: (302) 703-6876

Lewes, DE 19958  
www.scrpower.com

# SPECIFICATIONS

INPUT SIGNAL (minimum compliance voltage):4-20mA (1.5V) 75 Ohms  
4-20mA INPUT TERMINAL TORQUE RATING: 5 in-lbs

SUPPLY VOLTAGE: 120/240VAC, 50/60Hz

POWER CONSUMPTION (max)

C1P-12/24-20: 30 watts

C1P-12/24-30: 45 watts

CURRENT RATING (vertically mounted)

C1P-12/24-20 (unmounted): 12 amps

C1P-12/24-20 (mtd. to mtl. plate): 20amps

C1P-12/24-30: 30 amps

OPERATING TEMPERATURE (ambient)	0-50°C/122°F
FUSE REQUIREMENTS (TRIAC Protection)	semi-conductor/ rectifier I <sup>2</sup> T
RESPONSE TIME	10 mS
CONTROL METHOD	phase angle, proportional
OUTPUT VOLTAGE	1-98% of supply voltage
INPUT ISOLATION	2500 volts

# ORDERING CODES

C1P- \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
          Voltage      Amperes      Options

**VOLTAGE DESIGNATIONS:**

- (12) 120 VAC 50/60 Hz
- (24) 208-240 VAC 50/60 Hz
- (27) 277 VAC 50/60 Hz

**LOAD IN AMPS:**

20, 30 (15\*, 25\* for 380-480 VAC)

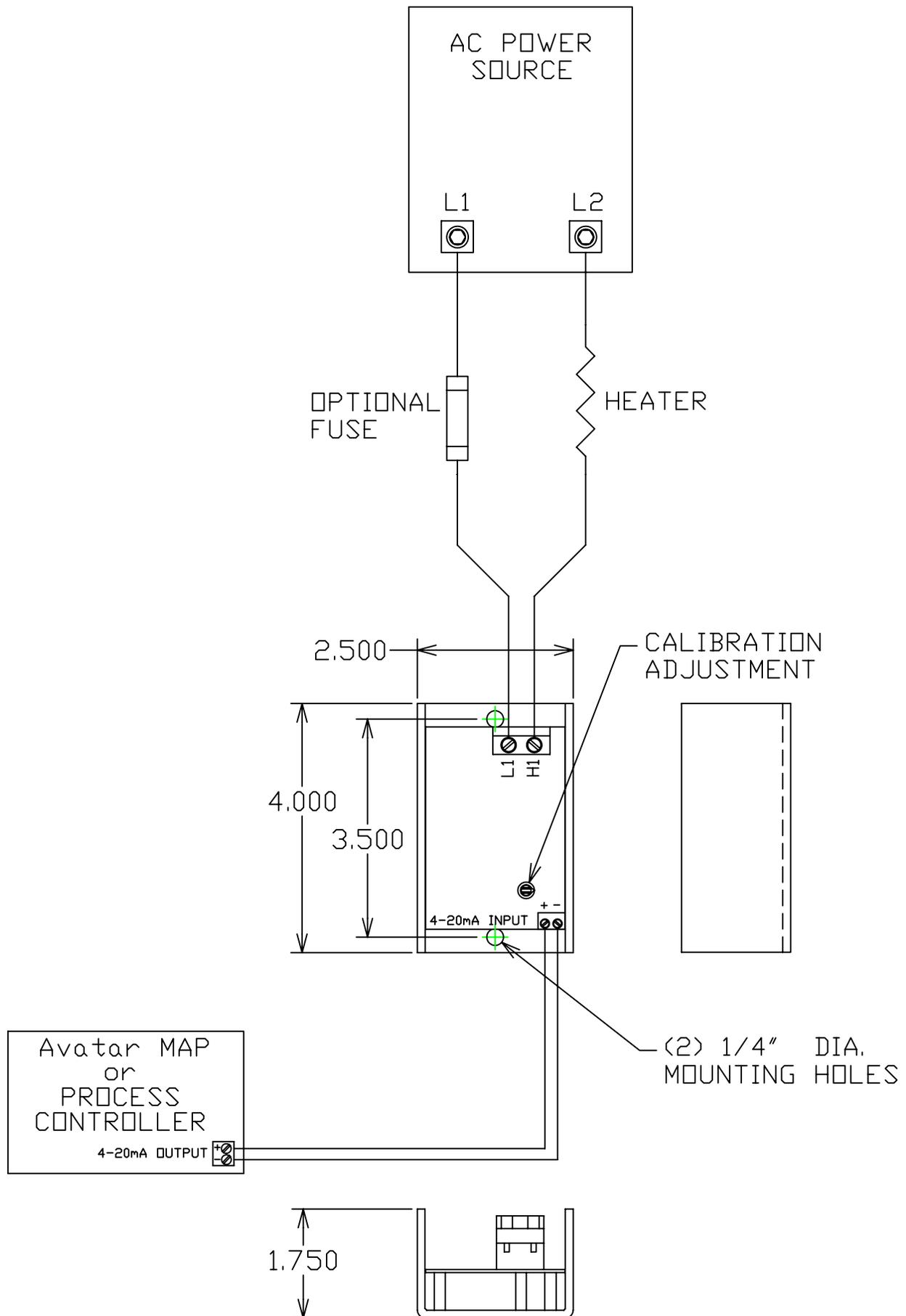
**OPTIONS:**

**Soft Start**

1 Second (S)

Example: C1P-24-30-S is a 240VAC, 30 Ampere controller with a 1 second soft start

# PHYSICAL DIMENSIONS and WIRING DIAGRAM C1P - 20 AMP



# PHYSICAL DIMENSIONS and WIRING DIAGRAM C1P - 30 AMP

