

EA34YD-04 Change Out Procedure to Athena Series 88 Controller

Date: 11/29/00

Steps for changing out the Thermalogic thermocouple unit to the Athena Series 88 Controller

1. Turn off and lock off the power to the unit.
2. Check that the power is off in the unit with a voltmeter to be sure that the power is turned off before touching any of the electrical components.
3. Mark the wires with the terminal numbers on the Thermalogic that is installed in the unit. See the attached wiring diagram for the Numbers / Wire Locations
4. Remove the wires from the old Thermalogic unit.
5. Remove the old Thermalogic unit from the vaporizer
6. Install the new Athena Unit using the same bolt holes. The Athena can be removed from its plastic mounting channel to allow the holes to be drilled into the channel to match the holes in the Thermalogic unit.
7. The thermocouple wire leads may need to be re-routed. If so, make sure that they are not near any power wire or 120-vac wire. If the thermocouple wire is routed with 120 vac or higher voltage wires, the controller may perform incorrectly. The high voltage may induce a voltage in the thermocouple wire.
8. Connect the thermocouple to the connections on the controller per the wiring diagram. Red to Minus and Blue to Plus. These connections are located on the opposite end of the controller from the main power terminals.

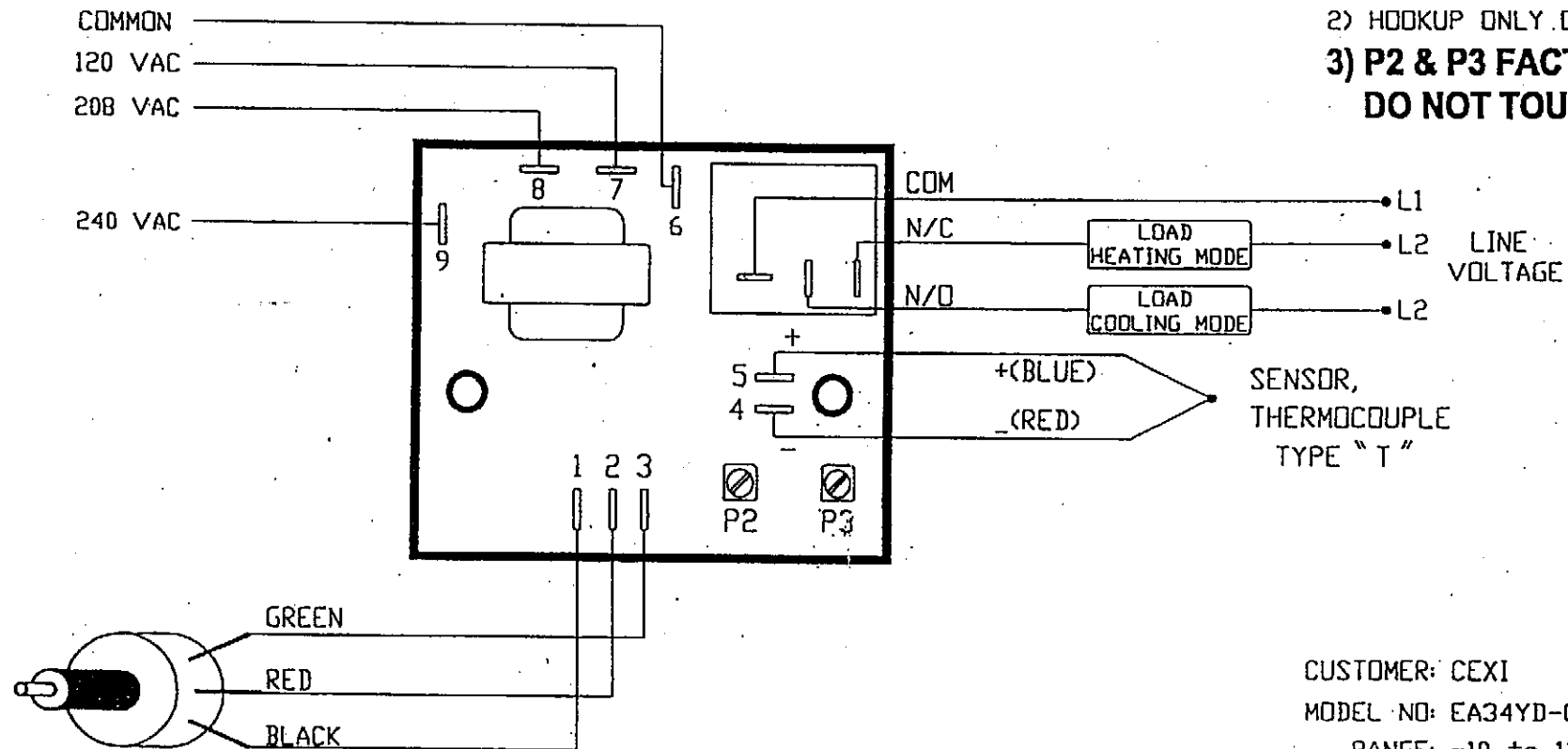
The wire transfer is as follows

Old Thermalogic Terminal No.	New Athena Terminal No.
Terminal 7	120 Terminal
Terminal 6 (White wire)	LN Terminal (should be the white wire)
Terminal COM	C Terminal
Terminal N/C	NO Terminal

REV.	DESCRIPTION	DATE
A	ADDED HEATING MODE	8-9-99
B	SWAPPED BLUE & RED WIRES	10-14-99

NOTES:

- 1) USE ONLY ONE VOLTAGE AT A TIME ALONG WITH COMMON.
- 2) HOOKUP ONLY ONE LOAD
- 3) **P2 & P3 FACTORY SET DO NOT TOUCH.**



CUSTOMER: CEXI
 MODEL NO: EA34YD-01
 RANGE: -10 to 110 °F
 LINE VOLTAGE: 120/208/240 VAC

Calibration procedure

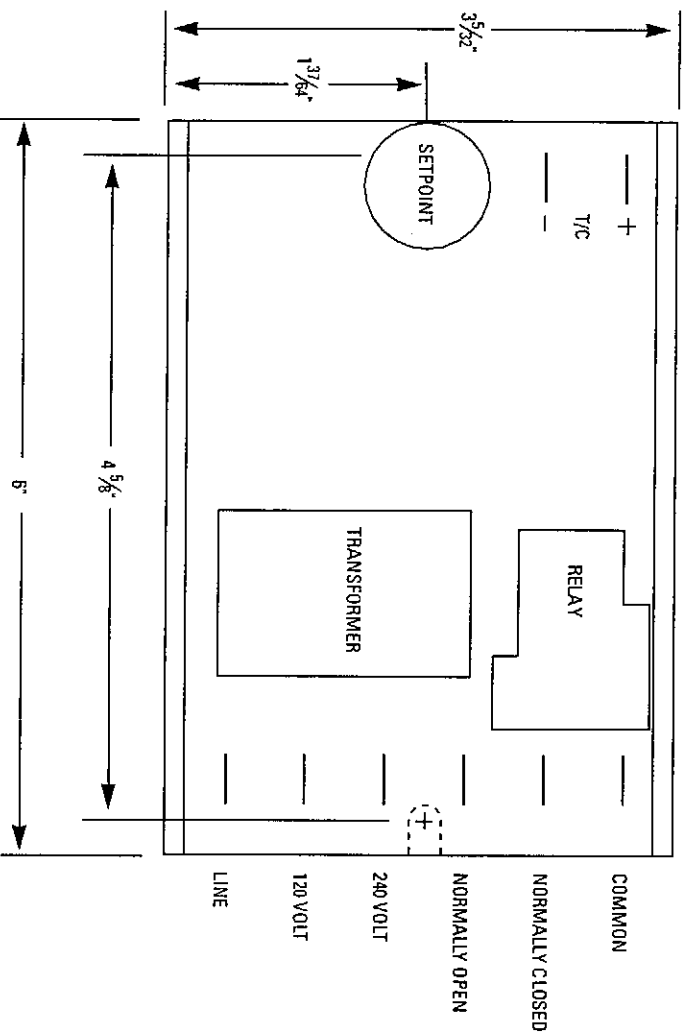
1. Turn potentiometer shaft all the way CCW.
2. Place knob on the potentiometer shaft so that the indicator on the knob lines up with the CAL point (-10 F) on the face plate.
3. Tighten knob to potentiometer shaft.
4. Calibration is complete.

<h1 style="margin: 0;">Thermalogic</h1> <p style="margin: 0;">22 KANE INDUSTRIAL DRIVE, HUDSON, MA. 01749</p>		
<h2 style="margin: 0;">TITLE</h2> <h3 style="margin: 0;">WIRING DIAGRAM</h3>		
BY K.Chase	DATE 6-2-99	NUMBER
APP'D	DATE	704-1460

SERIES 88 ELECTRONIC TEMPERATURE CONTROLLER

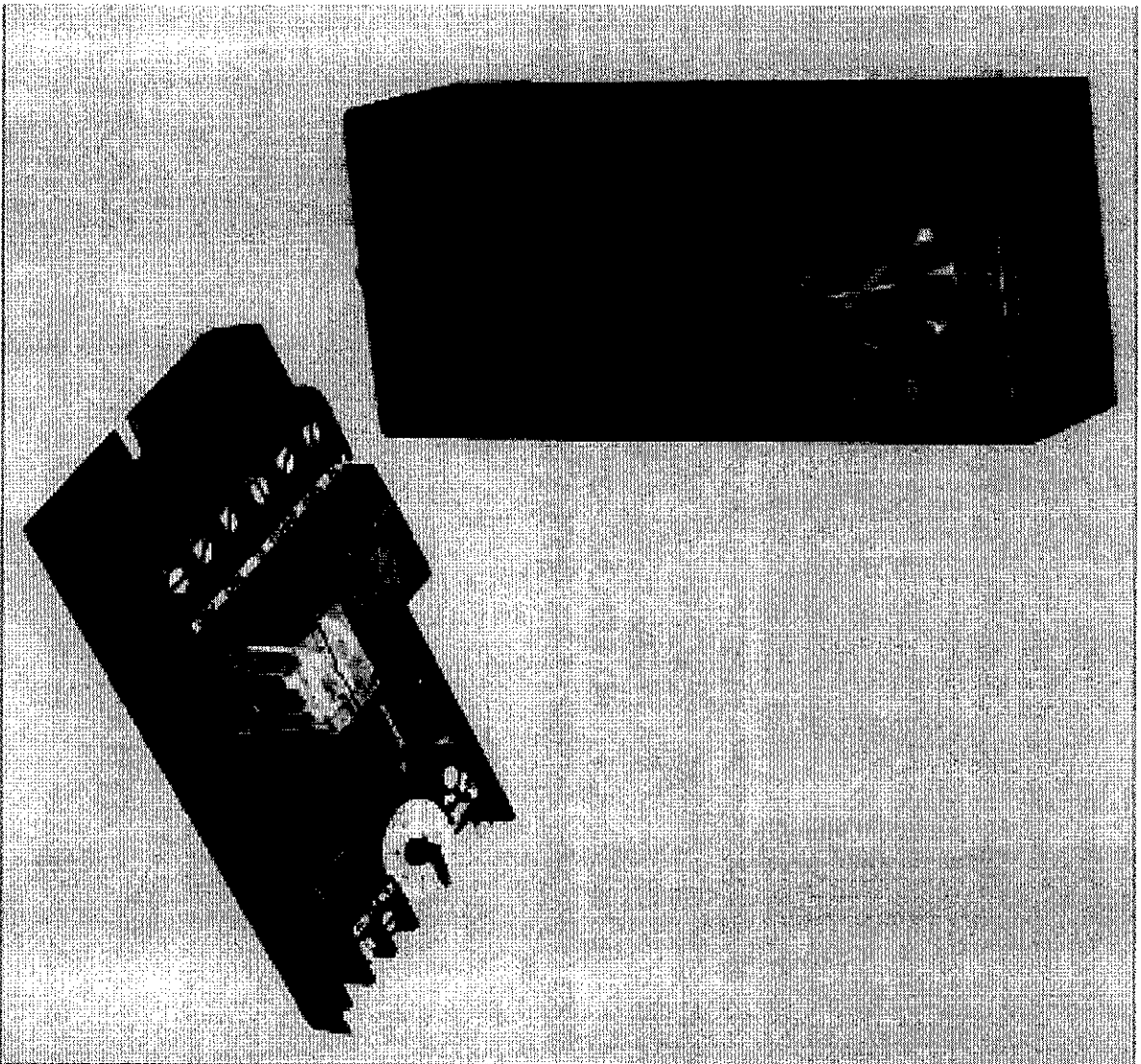
SPECIFICATIONS

Control Mode:	Adjustable from hysteresis of 5° F to proportional of 25° F
Control Power:	120/240 Vac ±10%
Input:	Thermocouple, sensor break protection
Ambient Temperature:	32° to 150° F (0° to 66° C)
Humidity:	5 to 95% non-condensing
Output:	SPDT relay 20 A 120/240 Vac
Cold Junction Compensation:	Internal electrical bridge
Power:	<2 watts
Consumption:	Fast-on lugs
Connections:	



SERIES 80 TEMPERATURE CONTROLLERS

Instruction Manual



MADE IN
U.S.A.



ATHENA

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CONTENTS

SECTION 1	GENERAL INTRODUCTION	
1.1	General Description and Cautions	1
1.2	Configurations	1
1.3	Specifications	2
SECTION 2	PRELIMINARY INSTRUCTIONS	
2.1	Unpacking	3
2.2	Locating	3
2.3	Mounting	3
2.4	Wiring	5
2.5	Thermocouple Placement	5
SECTION 3	OPERATION/MAINTENANCE	
3.1	Operation	5
3.2	Limit Control	5
3.3	Adjustments	5
3.4	Maintenance	6
SECTION 4	TROUBLESHOOTING	
4.1	Troubleshooting Steps	7
SECTION	REPLACEMENT PARTS	
5.1	Replacement Part Numbers	8

SECTION 1 GENERAL INTRODUCTION

1.1 GENERAL DESCRIPTION AND CAUTIONS.

The Athena Series 80 Controllers are designed for accurate temperature control of ovens, molds, hot stamping machines, packaging machinery, heat tracing, and for replacement of bulb and capillary type temperature controllers. Limit configurations have FM approval.

CAUTION

Possible Fire Hazard. Because these temperature controls or associated equipment may not always fail safe, an approved temperature and/or pressure safety control should be used for safe operation.

1.2 CONFIGURATIONS.

- A - Open PCB unit with set point on the PCB
- B - Open PCB unit with remote set point
- * D - T case with set point on the case
- L - High limit controller, D configuration with reset button on case

* - T case 86 series only

1.3 SPECIFICATIONS.

Set Point:	Single turn, 270° rotation Potentiometer (Local or Remote)
Set Point Resolution:	1% with circuit board potentiometer 1/4% with remote potentiometer
Calibration Accuracy:	1% at calibration points with remote potentiometer 2% at calibration points Potentiometer on circuit board
Ambient Temperature Range:	30° to 130° F Series 82 & 86 30° to 150° F Series 88
Cold Junction Compensation:	Internal electrical bridge
Differential/Proportional Band:	Adjustable from differential of 5° F to proportional band of 25° F
Thermocouple Break Protection:	UPSCALE
Output:	B - S.P.S.T. relay 10A/5A H - S.P.S.T. relay 15A S - Pulsed D.C. 0-20Vdc T - S.P.S.T. SS relay 1A
Supply Voltage:	120/240 ± 10% V 50/60 Hz.
Power Consumption:	2 watts
Weight:	1 pound, 8 oz. (0.68 kg) with case and cover

SECTION 2 PRELIMINARY INSTRUCTIONS

2.1 UNPACKING.

Carefully unpack the instrument and inspect for shipping damage. Report any damage to the carrier immediately.

2.2 LOCATING.

Select a location for the controller where it will not be subjected to excessive shock, vibration, dirt, moisture and/or oil. The ambient temperature of the area should be between 30° F and 130° F (Series 82 & 86) 30° F and 150° F (Series 88)

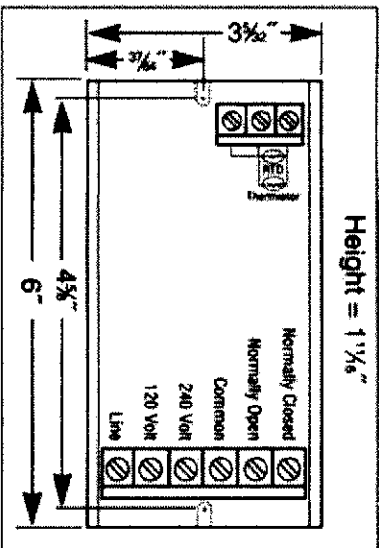
2.3 MOUNTING. (SERIES 82,86,88)

Panel Mounting, External Set Point:

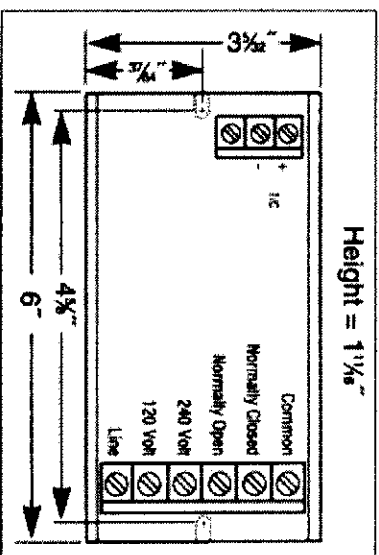
1. Remove knob with small screwdriver and take off the nut holding the scale to the potentiometer.
2. Mount potentiometer through a 3/8" hole in your panel; put scale over shaft and tighten nut.
3. Turn shaft counter clockwise until it stops.
4. Now put knob back on and line up its indicating mark with the arrow on scale.
5. Tighten knob. The unit is now calibrated.

Metal Mounting Case:

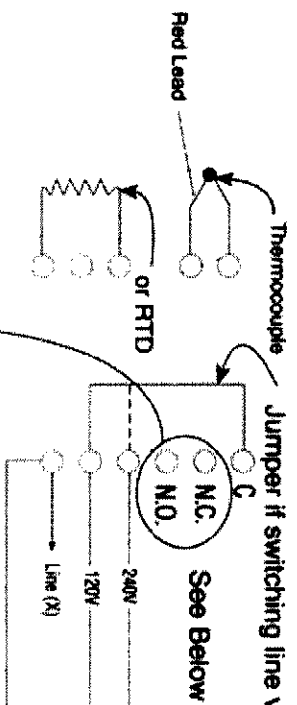
1. Remove the two screws holding the cover. Remove the cover.
2. Carefully spread the plastic holding track and remove the circuit board.
3. Mount the base and plastic track with the appropriate hardware (not supplied) through the two 11/64" dia. mounting holes.
4. Replace circuit board by aligning one side in track and then gently press in the opposite side. Replace the cover.



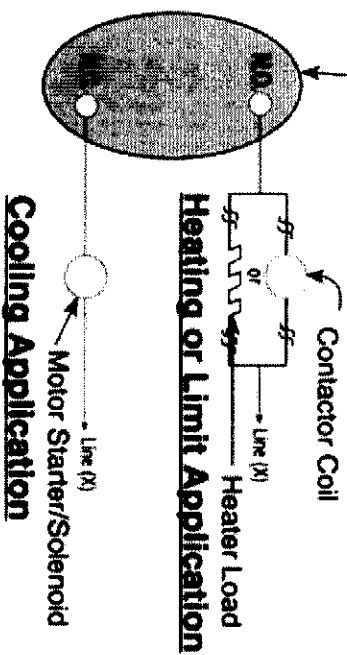
Series 82 Wiring & Mounting



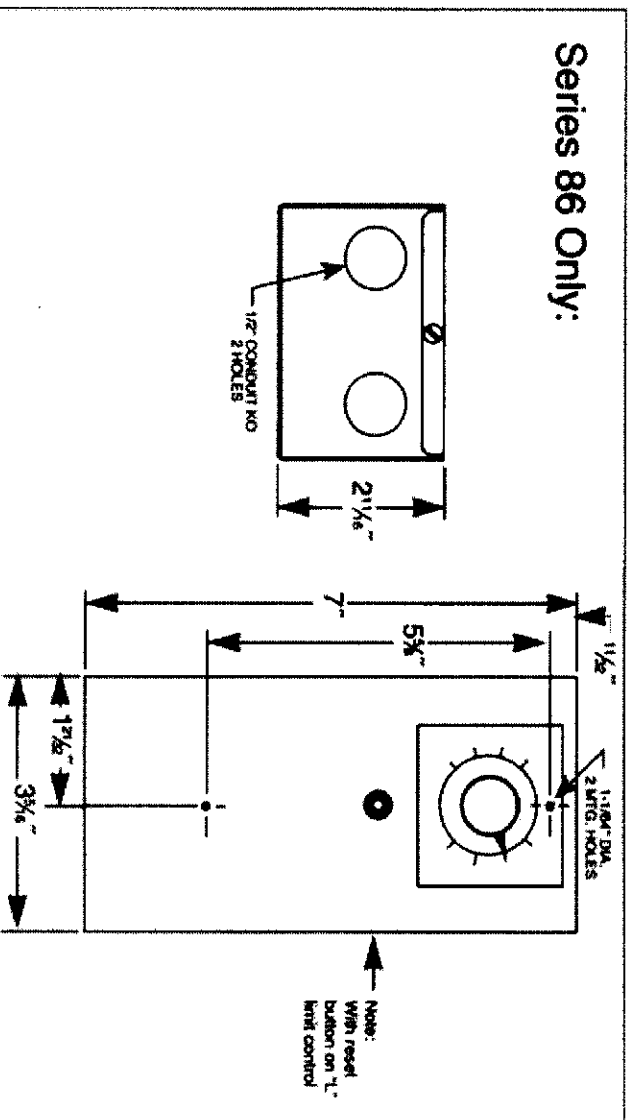
Series 86/88 Wiring & Mounting
(Series 86 has push-on terminals)



Applications



Series 86 Only:



2.4 WIRING.

Consult the wiring diagrams on page 4. The unit can be operated with 120/240V 50/60 Hz line voltage. Be certain that the correct voltage is applied to the proper terminals. Cooling loads can be driven from the "N.C." terminal.

2.5 THERMOCOUPLE PLACEMENT.

Proper thermocouple placement can eliminate many problems in the system. The probe should be placed so that it can detect any temperature change with little thermal lag. In a process that requires fairly constant heat output, the probe should be placed close to the heater. In processes where heat demand is variable, the probe should be close to the work area. Some experimenting with probe location will provide optimum results. Extension wires must be of sufficient size so that on long runs the thermocouple circuit resistance does not exceed 100 ohms.

SECTION 3 OPERATION/MAINTENANCE

3.1 OPERATION.

After all connections are completed, adjust the Setpoint knob to the desired temperature and apply line voltage. Adjust the MODE potentiometer as per section 3.3. If Proportional operation has been selected, the output will cycle on and off continuously. If On-Off mode has been selected, the output will change state only as temperature varies around the setpoint.

3.2 LIMIT CONTROL.

Adjust the Setpoint to the desired limit temperature. Apply power and press the Manual Reset button. The Control relay is now latched, the normally open and common contacts closed. When the process temperature being monitored by the limit thermocouple reaches the set value, the limit relay will change state and remain in that state until the monitored temperature falls below the setpoint and the Manual Reset button is depressed. An option is available to provide automatic reset of the limit upon application of control power.

3.3 ADJUSTMENTS.

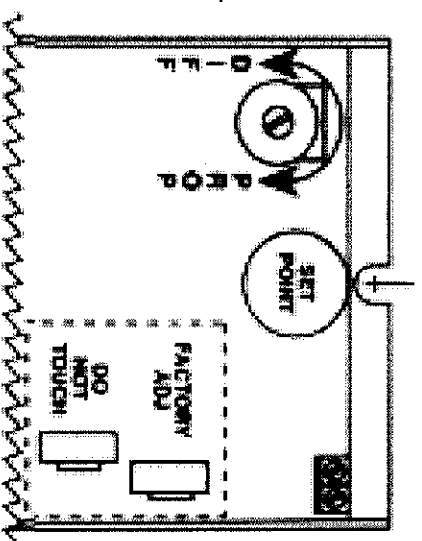
The MODE adjustment allows the control mode to be proportional to On-Off.

For processes requiring very accurate control, adjust the MODE

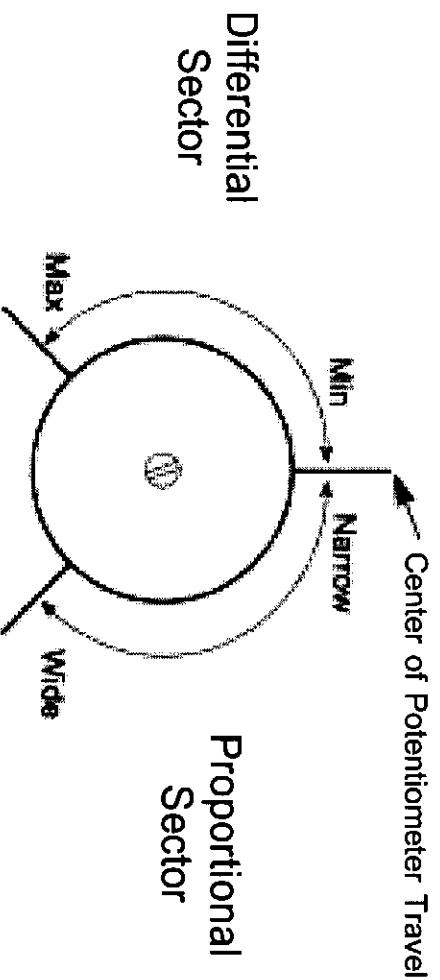
potentiometer clockwise in the Proportional sector until process temperature oscillations just stop.

For processes such as mechanical refrigeration systems, fans, and solenoid valves, and wherever continuous cycling would be detrimental to the load handler, On-Off control should be used. Adjusting the

MODE potentiometer counterclockwise from its center of travel provides On-Off control. The amount of hysteresis (differential) is increased with further ccw adjustments of the MODE potentiometer. Adjustment here provides a compromise between closest temperature control and minimum cycling of the load handler.



Adjustments



3.4 MAINTENANCE.

1. Keep the controller fairly clean and protect it from dirt, water, and corrosive fumes.
2. Periodically recheck electrical connections.
3. Replace the relay if the contacts become electrically worn.

WARNING

Applying incorrect voltage will damage controller. Shorted heaters or wires can damage the relay. For maximum protection, fuse incoming power lines with a fast 10A fuse.

SECTION 5 REPLACEMENT PARTS

5.1 REPLACEMENT PART NUMBERS.

“B” Plug-In Module	Part number: 218B006U01
	Description #A-60G2-6
‘H’ Solder-In Relay	Part number 218B008U01
“H” Plug-In Relay	Part number 218B003U01
“H” Plug-In Base	Part number 241A00SU01
“T” Plug-In Module	Part number 218B007U01
	Description #A-60G2-2

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