CALIBRATION PROCEDURE FOR MODEL 1422-Z001A HEAT/COOL CONTROLLER

GENERAL INFORMATION

Access to the calibration adjustments is obtained by removing the front bezel and graphics panel of the controller. The calibration procedure should begin with the Display Calibration since the display readings are used as the reference for subsequent setpoint calibration.

CAUTION

It is recommended that the load be temporarily disconnected from the controller during calibration to prevent damage to the system should the load be energized for long periods.

Equipment required to perform the calibration procedures include a Thermocouple Simulator (for TC input) or Precision Resistance (for PRTD input) and a 1/8" flat blade screwdriver. For purposes of this procedure, Simulator will refer to either the Thermocouple Simulator or Precision Resistance whichever is applicable. The Simulator must be connected to the Sensor input terminals of the controller before beginning this calibration procedure.

DISPLAY CALIBRATION

Adjustments

"°F" trim pot - Used to calibrate the 0°F temperature display.
"°C" trim pot - Used to calibrate the 0°C temperature display.
"Gain" trim pot - Used to calibrate the maximum temperature display.

Calibration Procedure

1. Set the Simulator to 0°F and the F/C display switch in the "F" position.
2. Adjust the "°F" trim pot to get a 0°F display.
3. Next, set the Simulator to the maximum temperature shown on the S.P. Dial and adjust the "Gain" trim pot for a correct display.
4. Finally, set the Simulator to 0°C and adjust the "°C" trim pot to get a 0°C display.

SETPOINT CALIBRATION

Adjustments

"Offset" - Used to set the minimum setpoint limit
"Span" - Used to set the maximum setpoint limit
"Cool" - Adjusts the separation between Heat and Cool setpoints

Calibration Procedure

1. Set the Controller and Simulator to the minimum setpoint temperature indicated on the dial.
2. Turn the "Offset" trim pot CW, if required, until the Heat LED turns ON then, slowly turn it CCW until the Heat LED just turns OFF again. (Rotate the "Cool" pot CW to extinguish the Cool LED, if necessary)

3. Next, set the Controller and Simulator to the maximum setpoint temperature indicated on the dial.
4. Turn the "Span" trim pot CW, if required, until the Heat LED turns ON then, slowly turn it CCW until the Heat LED just turns OFF.
   Note: Interaction between Span and Offset adjustments may require repeating steps 1 thru 4 for best accuracy when making calibration changes of more than 1% of span.
5. Finally, adjust the "Cool" trim pot as required to achieve the desired separation between the Heat and Cool operate points.

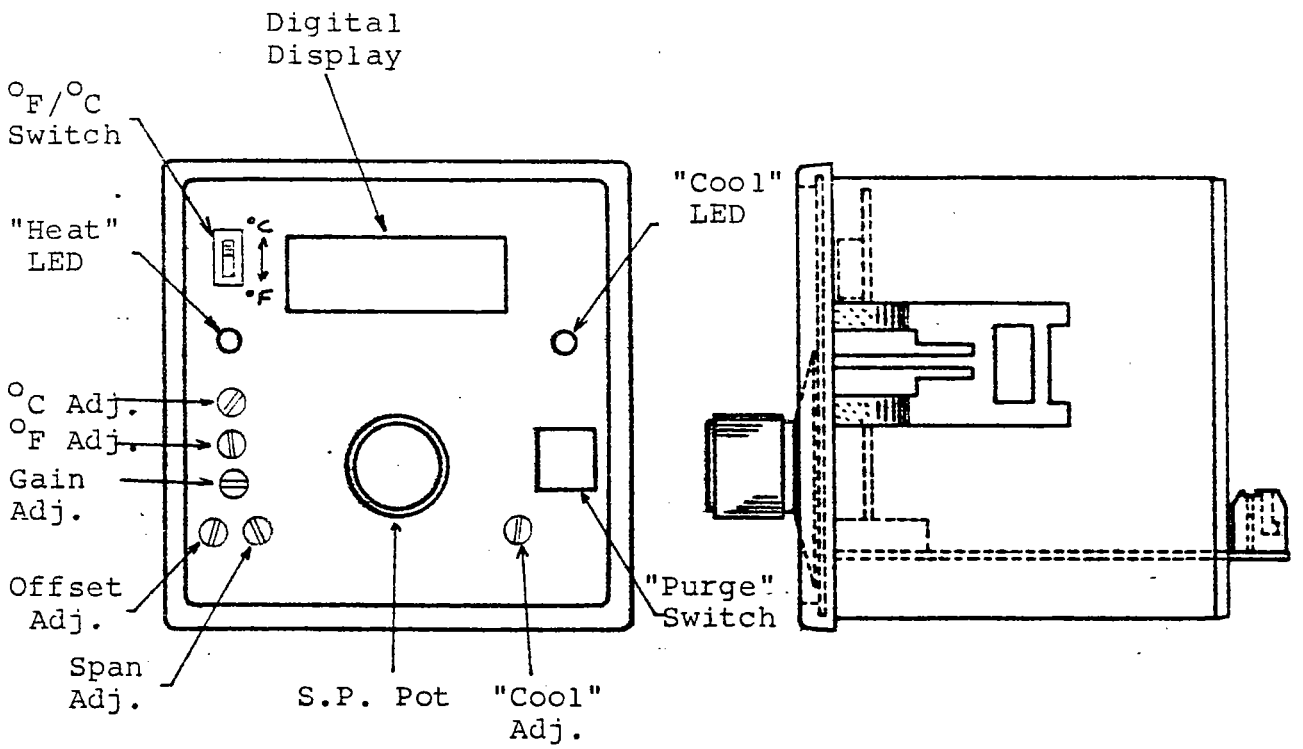
CALIBRATION IS COMPLETE

MODEL 1422-Z001A HEATING/COOLING TEMPERATURE CONTROLLER
SPECIFICATIONS AND CALIBRATION

Electrical Specifications

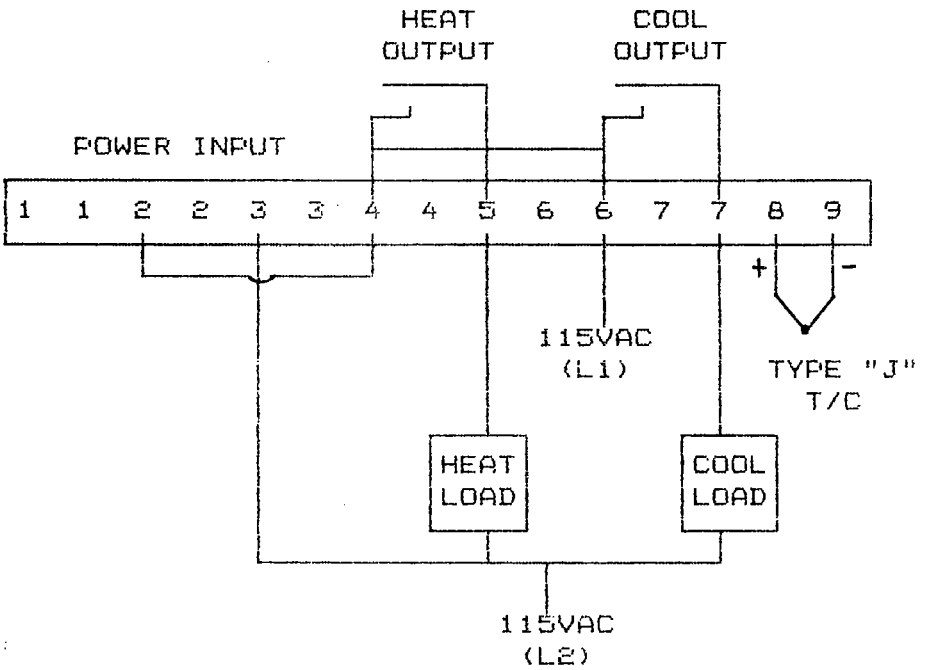
Power Input:	115/230VAC +/-15%, 50/60Hz 0.5 Amp
Control Outputs:	Opto Coupled Triacs rated ~~1Amp~~ 230VAC Pilot Duty
Control Mode:	(Heat) On-Off with 1°F Hyst. typical
	(Cool) Proportioning w/25°F BW & 4 sec cycle rate typ.
H/C Separation:	Adjustable from 0 to 10°F
Sensor Type:	Type "J" Thermocouple
Control S.P:	40 to 250°F with optional ranges up to 1000°F
Temp Display:	3-1/2 Digit LCD indicator with selectable °F/°C display.
Annunciators:	Red LED indicates Heat output energized
	Yellow LED indicates Cool output energized
Air Purge:	Momentary Pushbutton manually energizes cool output
Sensor Break:	Heat output de-energizes and Cool output energizes with an open sensor condition.
Ambient Comp.:	Automatic cold junction compensation
Oper. Amb. Temp:	0 to 50°C
Display Accuracy:	Process:+/-0.5% of reading or +/-2 F(1 C)whichever is greater and
Mechanical	+/- LSD. Setpoint: +/-2 F(1 C) and +/- LSD.

Mounting:	Enclosure snaps into 1/4 DIN cutout :92mmx92mm.
Terminations:	15 position, plug-in terminal block
Field Service:	For field service un-plug the teminal block, remove the front bezel and slide the circuit board out from the front of the case.

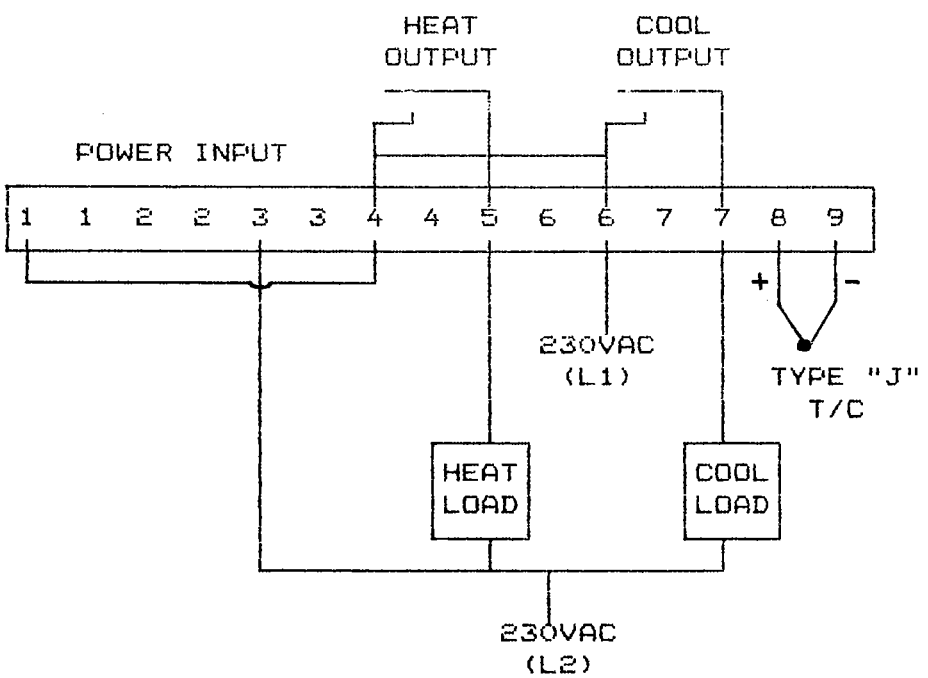


MODEL 1422-Z001 1/4 DIN HEATING/COOLING CONTROLLER

WIRING DIAGRAM (115VAC)



WIRING DIAGRAM (230VAC)



Note: Terminals with the same number are common to each other and were made available to provide additional tie points for machine wiring.

TROUBLESHOOTING GUIDE

SYMPTOM	CORRECTIVE ACTION
Control & Displays are erractic or not functioning at all.	Check for proper supply voltage and that fluctuations are within +/-15% of nominal; correct if necessary.
	Check for loose or broken wires; correct if necessary.
	If problem persists, replace control.
Digital display operating properly but, Heat and/or Cool LED(s) and output(s) not functioning.	Check for proper setpoint calibration; if problem persists, replace control.
Digital display and LED's are operating properly but, output(s) remain ON or OFF continuosly.	Check for proper supply voltage; correct if necessary.
	Check for loose or broken wire connections; correct as required
	If problem persists, replace control.
Control operates properly but, temperature display is incorrect or erractic.	Check for loose thermocouple connections; correct as required.
	Check for properly grounded thermocouple shield, if applicable; correct if necessary.
	If problem persists, replace control.