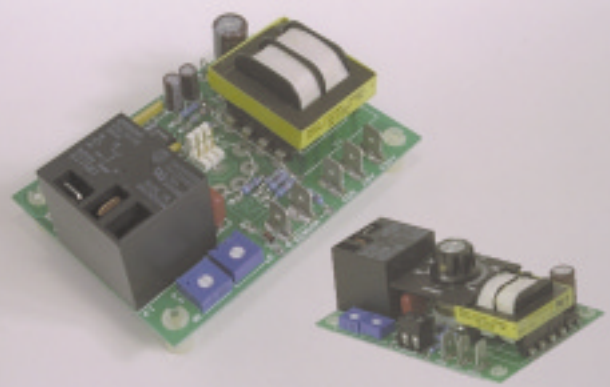


Future Designs Series 121 thermistor controller and the Series 122 thermocouple controller incorporate highly reliable state-of-the-art electronic circuitry in a very economical open board design.

Their small size and very low cost make them the ideal choice for cost sensitive OEM applications requiring the accuracy, reliability and versatility only available in an electronic controller.

#### FEATURES

115/230VAC FIELD SELECTABLE INPUT VOLTAGE  
 SPST 30 AMP RELAY OUTPUT  
 ON-OFF CONTROL MODE  
 OPEN-ON-RISE CONTROL ACTION (HEATING)  
 LOCAL SETPOINT ADJUSTMENT  
 1/4" QC FIELD TERMINATIONS



FDC

121/122 CONTROLLERS

## 121-122 SPECIFICATIONS

#### POWER INPUT:

115/230VAC +/-10%, 50/60Hz, 3VA max.  
 24VAC +/-10% optional

#### CONTROL OUTPUT:

30Amp SPST relays, UL rated 20Amps resistive and 1Amp pilot duty @ 120/240VAC for 100,000 cycles; SPDT relays or 24VDC to drive external SSRs optional

#### CONTROL MODE:

On-Off with 30F to 40F hysteresis standard; Special hysteresis values optional  
 Time proportioning with PB=2% of span  
 15 seconds cycle time standard  
 Special PB & cycle times optional (consult factory)

#### CONTROL ACTION:

Open-on-Rise (heating) standard;  
 Close-on-Rise (cooling) optional

#### SENSOR TYPE:

NTC Thermistor \*121 only  
 "J", "K", "T" or "E" thermocouple \*122 only  
 Setpoint Range:      Overlapping ranges from  
                                  -500F to 5000F (series 121)  
                                  -1000F to 25000F (series 122)

#### SETPOINT ADJUSTMENT:

Fixed setpoint (factory calibrated) with trim pot for field adjustment standard; local or remote setpoint pot optional

Compensation: Automatic cold junction compensation (thermocouple sensor only)

#### SENSOR FAULT:

Output de-energizes with open or shorted  
 Protection: Sensor or thermocouple break

**AMB. OPER. TEMP:** OC to 70C

**OPER. RELATIVE HUMIDITY:** 5 to 90% non-condensing

#### DIMENSIONS:

121 - 3.4"(W) X 2.6"(H) X 1.57(D)  
 122 - 3.62"(W) X 2.62"(H) X 1.75(D)

# ORDERING INFORMATION

Enter a number in each box which corresponds to the specifications you want when ordering 121/122 controllers.

FDC 121  
FDC 122

POWER

INPUT

RANGE

SP

CONTROL

OUT

DISP

OPTION

## POWER INPUT

- 1 115VAC
- 2 230VAC
- 3 115/230VAC (FIELD SELECTABLE)
- 4 24VAC
- 9 SPECIAL

## SIGNAL INPUT

- TH THERMISTOR
- JT "J" T/C
- KT "K" T/C
- TT "T" T/C
- ET "E" T/C

## INPUT RANGE

### THERMISTOR

- 21 60 TO 250F
- 22 200F TO 400F
- 23 200F TO 550F
- 24 150F TO 450F
- 25 150F TO 350F
- 26 50F TO 160F
- 27 0F TO 100F
- 28 70F TO 140F

### THERMOCOUPLE

- 01 0 TO 250F
- 02 0 TO 500F
- 03 0 TO 1000F
- 04 0 TO 2000F

## SETPOINT ADJUST

- A LOCAL SP ADJUST POT
- B LOCAL SP ADJUST WITH GRADUATED DIAL(122 ONLY)
- C REMOTE SETPOINT ADJUST POT
- D REMOTE SETPOINT ADJUST WITH GRADUATED DIAL
- 9 SPECIAL

## CONTROL TYPE

- 1 ON/OFF HEATING
- 2 ON/OFF COOLING
- 3 TIME PROPORTIONAL HEATING
- 4 TIME PROPORTIONAL COOLING

## OUTPUT TYPE/RATING

- 1 20 AMP RELAY SPST (N.O.)
- 2 20 AMP RELAY SPDT (N.O/N.C.)
- 3 SSR DRIVE 24VDC@30MA
- 9 SPECIAL

## DISPLAY

- 0 NONE
- 9 SPECIAL

## OPTIONS

- T SNAP TRACK MTG.
- 9 SPECIAL

**Note: Minimum order quantity fo 25 units of the same part# per release is required.**

Agency Approvals:

UL\CUL File # E197958

February 2004

