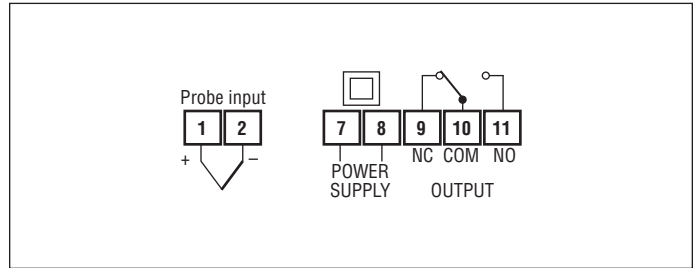




### Wiring Diagram



### Description

The DP7000 Series controllers are designed for many heating and cooling, high temperature applications. The probe temperature is displayed on the bright 3-digit display. The user is able to program 18 different parameters including set point, hysteresis, cycle time and ambient probe adjustment using the silicone front keypad. The unit features error or alarm warning, internal buzzer and password protection. Select between thermocouple J, K or S type, temperature display in °C or °F and 115 VAC, 230 VAC, 12 VAC/VDC or 24 VAC/VDC power supplies.

### Model References

The model reference is given by: DP700X

Where each suffix can take the following values:

- X 1 = 115 VAC - °F; 2 = 115 VAC - °C  
 3 = 230 VAC - °F; 4 = 230 VAC - °C  
 5 = 12 VAC/DC - °F; 6 = 12 VAC/DC - °C  
 7 = 24 VAC/DC - °F; 8 = 24 VAC/DC - °C

### Installation

**Note:** Unit must be mounted away from vibration, impacts, water and corrosive gases.

- Cut hole in panel 71 x 29 mm (2.80 x 1.14").
- Apply silicone (or rubber gasket) around the perimeter of the hole to prevent leakage.
- Insert unit into hole of panel.
- Slide removable fitting clips onto unit from the back until secure to panel.
- Remove back cover to wire unit.
- Wiring diagram is displayed on the top of the unit.
- **Note:** DO NOT INSTALL PROBE CABLE NEAR POWER CABLES.
- Replace cover once wiring is completed.

### Technical Data

**Probe Range:** 32 to 999°F (0 to 700°C) for Type J thermocouple; 32 to 999°F (0 to 999°C) for Type K or S thermocouples.

**Input:** Type J, K or S thermocouple.

**Output:** SPDT relay rated 16A @ 240 VAC resistive.

**Horsepower Rating (HP):** 1 HP.

**Control Type:** ON/OFF.

**Power Requirements:** 115 VAC, 230 VAC, 12 VAC/VDC or 24 VAC/VDC (depending on model).

**Accuracy:** ±1% FS.

**Display:** 3-digit, red, 1/2" (12.7 mm) digits, plus sign.

**Resolution:** 1°.

**Memory Backup:** Nonvolatile memory.

**Temperature Limits:**

Ambient: 32 to 158°F (0 to 70°C);

Storage Temperature: -4 to 176°F (-20 to 80°C).

**Weight:** 2.3 oz (65 g).

**Front Panel Rating:** IP64.

**Agency Approvals:** CE, cUR, UR.

## List of Parameters

	Description	Units	Range
<b>SP</b>	Set Point	Degrees	r1 to r2
<b>r0</b>	Differential or Hysteresis	Degrees	1 to 99
<b>r1</b>	Lower Value Set Point	Degrees	0 to r2
<b>r2</b>	Higher Value Set Point	Degrees	r1 to 999
<b>d0</b>	Cooling or heating control	Option	Co/Ht
<b>c0</b>	Minimum stopping time	Seconds	0 to 999
<b>c2</b>	Output status with probe error	Option	On/Off
<b>P1</b>	Ambient Probe Adjustment	Degrees	-30 to 30
<b>P5</b>	Ambient Probe Type	Option	tcJ, tch, tcS
<b>P6</b>	Probe Response	Numeric	0 to 3
<b>H5</b>	Access code to parameters	Numeric	0 to 255
<b>A0</b>	Alarm 1 Hysteresis	Degrees	1 to 999
<b>A1</b>	Alarm 1 Threshold	Degrees	0 to 999
<b>A2</b>	Alarm 1 Exclusion Time	Seconds	0 to 999
<b>A3</b>	Alarm 1 Type	Option	OFF,HI,LO
<b>A4</b>	Alarm 2 Hysteresis	Degrees	1 to 999
<b>A5</b>	Alarm 2 Threshold	Degrees	0 to 999
<b>A6</b>	Alarm 2 Exclusion Time	Seconds	0 to 999
<b>A7</b>	Alarm 2 Type	Option	OFF,HI,LO

## Parameter Descriptions

**SP**= Set Point. Temperature we wish to regulate the machine (variable from r1 to r2)

**r0**= Differential or Hysteresis

**r1**= Lower value for SP

**r2**= Higher value for SP

**d0**= Cooling or heating control

if d0 = Ht and TS is the temperature of ambient probe:

if TS >= SP the load is disconnected

if TS <= SP-r0 the load is connected

if d0 = Co then:

if TS <= SP the load is disconnected

if TS >= SP+r0 the load is connected

**c0**= Minimum stopping time of the load

**c2**= Output status with probe error

**P1**= Ambient probe adjustment

**P5**= Ambient probe type (tcJ = Type J, tch = Type K, tcS = Type S)

**P6**= Probe response rate (0=8 sec, 1=4 sec, 2=2 sec, 3=1 sec)

**H5**= Access code to parameters (it is set to 00 from factory)

**A0, A1, A2, A3**= Alarm 1 parameters

If A3=OFF alarm 1 disabled

If A3=HI then a high temperature alarm is set:

if TS >=SP+A1 the alarm 1 is activated

if TS <=SP+A1-A0 the alarm 1 is de-activated

If A3=LO then a low temperature alarm is set:

if TS <=SP-A1 the alarm 1 is activated

if TS >=SP-A1+A0 the alarm 1 is de-activated

The alarm 1 is not activated until the time since instrument is turn on is higher than

A2

**A4, A5, A6, A7**= Alarm 2 parameters (similar to alarm 1)

## Parameter Programming

**Set Point (SP) is the only parameter the user can access without code protection.**

- Press SET. SP text will appear on the display.
- Press SET again. The real value is shown on the display.
- The value can be modified with the UP and DOWN arrows.
- Press SET to enter any new values.
- Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

### Access to all code protected parameters.

- Press SET for 8 seconds. The access code value 00 is shown on the display. (Unit comes with code set at 00 from factory).
- With the UP and DOWN arrows, code can be set to user needs.
- Press SET to enter the code. If code is correct, the first parameter label is shown on the display (SP).
- Move to the desired parameter with the UP and DOWN keys.
- Press SET to view the value on the display.
- The value can be modified with the UP and DOWN arrows.
- Press SET to enter the value and exit.
- Repeat until all necessary parameters are modified.
- Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

*\*The keyboard code can be reset to ZERO by turning off the controller and turning it on again while keeping the SET key depressed.*

## Led indication, buzzer and display messages

The led *OUT* indicates if the load is connected or not.

In normal operation, the probe temperature will be shown on the display. In case of alarm or error, the following messages can be shown:

- **Er** = Memory Error
- **oo** = Open Probe Error
- **--** = Ambient temperature out of range

In case of alarm or error the internal buzzer is activated. The buzzer can be silenced pressing the SET and DOWN arrows at the same time (when a new alarm or error occurs the buzzer sounds again).

## Maintenance, cleaning and repair

After final installation of the unit, no routine maintenance is required.

Clean the surface of the display controller with a soft and damp cloth. Never use abrasive detergents, petrol, alcohol or solvents.

All repairs must be made by authorized personnel.