DCW-115, DCW-220, DC-115S and DC-230S Temperature Controllers

Temperature Controller Set-up

This digital controller has been pre-programmed with all the necessary parameters to ensure reliable service and operation. The controller is pre-set from the factory with a temperature range from 30 °F to 100 °F with a display resolution of 1 degree °F and with a 1 °F temperature differential.

Temperature Controller Setpoint Set-up

To modify the set point* temperature. Press and release the “SET” button. SP will be displayed. Press the “SET” button again and the pre-programmed set point temperature will be displayed. Press the up arrow ▲ to increase or the down arrow ▼ to decrease the set point. Once the desired set point value has been selected, do not touch any of the keys for 1 minute or press the “SET” and the “DOWN” ▼ arrow at the same time. The control will then revert to displaying the current water temperature. It will now control the water temperature to the desired set point.


This indicates that it’s calling for either chilling or heating mode.

Temperature Differential:

When the water has reached the set point temperature, the water valve will switch off and will not switch back on until the water temperature has changed by 1 °F. This value is known as the temperature differential between on and off cycles. Refer to the temperature control parameters table to change the settings.

Display Calibration and Program Parameters

If the water temperature displayed on the control is different from the system water temperature, than an adjustment to the control can be done. The easiest way to calibrate the control is to press and hold the "Set" button for 8 seconds. The parameter “O” will be displayed. Wait 4 seconds. Then press the “SET” button and the “SP” will be displayed. Use the down ▼ or up ▲ arrow until you see the menu parameter "P1". Then press the “SET” button one time. The display will show “0”. Press the up or down arrows to adjust to the temperature offset. Once you have set the correct temperature offset, press "SET" button one more time and then wait 1 minute or press the “SET” and the “DOWN” ▼ arrow buttons at the same time to quit the programming. The display should return to the water temperature. The display should read correct water temperature readout.



DCW-115S and DCW-230S for HX-3W thru HX-60W models



DC-115S and DC-230S controls for HX-65W thru HX-240W and all custom models

See the next page to change other settings.

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DCW TEMPERATURE CONTROL PROGRAMMABLE PARAMETERS TABLE

DCW-115 AND DCW-230 CONTROLLER

Parr.		Description	Units	Range	Factory Set (°F)	Celsius Set (°C)
1	SP	Set Point	Degrees	r1 to r6	75	25
2	r0	Differential / Hysteresis	Degrees	1 to 20°	1	.5
3	r1	Lower value set point	Degrees	-50 to 150 °C -50 to 302 °F	30°F	0
4	r2	Higher value set point	Degrees	-50 to 150 °C -50 to 302 °F	100°F	40
5	d0	Heating or Cooling	Option	Ht or Co	Co	
6	d2	Time for Defrosting	Minutes	0 to 59	0	
7	d8	Interval Time between Defrosts	Hours	0 to 24	0	
8	c0	Min. time stop for compressor	Minutes	0 to 59	0	
9	c1	Continuous cycle time	Hours	0 to 24	0	
10	c2	On time of fault cycle	Minutes	0 to 99	0	
11	c3	Off time of fault cycle	Minutes	0 to 99	0	
12	A0	Alarm differential or hysteresis	Degrees	1 to 20	0	
13	A1	Max. alarm temperature	Degrees	1 to 90	100	40
14	A2	Minimum alarm temperature	Degrees	1 to 90	30	0
15	A7	Alarm time validation	Minutes	0 to 999		
16	P0	Temperature scale selection	Option	°C / °F	F	C
17	P1	Ambient Probe Adjustment	Degrees	-10 to 10°	0	
18	P4	Decimal point	Option	Yes or No	yes	
19	H0	Factory setting	Option	0		
20	H4	Address	Numeric	0 to 999		
21	H5	Parameter Access Code	Number	0 to 99	0	
22	H6	Probe input type	Option	Ptc / Ntc	NTC	
23	t0	Max. temperature on display	Degrees	-50 to 150 °C -50 to 302 °F	100°F	40

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DC-115S AND DC-230S CONTROLLER

Parr.		Description	Units	Range	Factory Set (°F)	Celsius Set (°C)
1	SP1	Set Point	Degrees	r1 to r6	75	25
2	r0	Differential / Hysteresis	Degrees	1 to 20°	1	.5
3	r1	Lower value set point	Degrees	-50 to 150 °C -50 to 302 °F	30°F	0
4	r2	Higher value set point	Degrees	-50 to 150 °C -50 to 302 °F	100°F	40
5	d0	Heating or Cooling	Option	Ht or Co	Co	
6	d2	Time for Defrosting	Minutes	0 to 59	0	
7	d8	Interval Time between Defrosts	Hours	0 to 24	0	
8	c0	Min. time stop for compressor	Minutes	0 to 59	0	
9	c1	Continuous cycle time	Hours	0 to 24	0	
10	c2	On time of fault cycle	Minutes	0 to 99	0	
11	c3	Off time of fault cycle	Minutes	0 to 99	0	
12	P0	Temperature scale selection	Option	°C / °F	F	C
13	P1	Ambient Probe Adjustment	Degrees	-10 to 10°	0	
14	H5	Parameter Access Code	Number	0 to 99	0	
15	H6	Probe input type	Option	Ptc / Ntc	NTC	
16	t0	Max. temperature on display	Degrees	-50 to 150 °C -50 to 302 °F	100°F	40

PARAMETER DESCRIPTIONS

SP = Set Point. Temperature desired to regulate the machine. Can vary from r1 to r2.
r0 = Differential. Heating: If temperature is ≥ SP then output is OFF. If temperature is < SP - r0 then output is ON. **Cooling**: If temperature is ≥ SP + r0 then output is ON. If temperature is < SP then output is OFF.
r1 = Lower Set Point Limit.
r2 = Upper Set Point Limit.
d0 = Heat or Cooling Control. Ht = heating control, Co = cooling control.
d2 = Not used
d8 = Not used.
c0 = Minimum Time for Compressor to be OFF. Minimum time for the compressor to stop until it can start again.
c1 = Continuous Cycle Time. The remaining time for a continuous cooling cycle.
c2 = ON Time of fault cycle, during probe error.
c3 = OFF Time of fault cycle, during probe error.
P0 = Selection of Engineering units between F and C.
P1 = Ambient Probe Calibration. Offsets temperature in degrees to adjust the ambient probe.
H5 = Access Code to Parameters. Factory-set to 0.
H6 = Selection of Input Probe Type: PTC or NTC.
t0 = Temperature Display Limit. Maximum temperature shown on the display, although the real temperature can be greater.

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OPERATION IN CASE OF ERROR
If the probe or thermostat memory should fail, the chiller or heater will turn off.

Error Messages
In normal operation, the probe temperature will be shown. In case of alarm press the “SET” and the “DOWN” ▼ arrow buttons at the same time to quit the alarm. An error messages will be shown:

- **Er** = Memory error
- **--** = Short circuit probe error
- **Oo** = Open probe
- **ALH** = High temperature alarm.
- **ALL** = Low temperature alarm.

Note: To turn alarm off press the SET button and the down arrow at the same time.

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