Chillers & Titanium
Heat Exchangers

DC SERIES SINGLE STAGE DIGITAL TEMPERATURE CONTROL INSTRUCTION MANUAL ALL MT CHILLERS AND DX HEAT EXCHANGERS

Model No. DC24S

Thank you for purchasing our digital temperature controller. It is designed to provide on/off control for commercial heating and cooling applications. It is equipped with a red LED display that provides a constant readout of the water temperature, and a touch keypad that allows the user to easily and accurately select the setpoint temperature and differential. The control enclosure has an NEMA 4X rating but, if installed outdoors, it should be protected against the direct weather.

10/1/2026



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, but will now control the water temperature to the desired set point.

 This indicates that the chiller should be energized.

Temperature Differential:

When the water has reached the set point temperature, the chiller 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 displayed water temperature 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.

See page 3 ”DC SINGLE STAGE TEMPERATURE CONTROL PROGRAMMABLE PARAMETERS TABLE” to change other settings

To adjust other parameters in the control contact Aqua Logic, Inc. for help.

PH: 704.744.1391 or email: info@aqualogicinc.com

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DC SINGLE STAGE TEMPERATURE CONTROL PROGRAMMABLE PARAMETERS TABLE

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	1
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.

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:

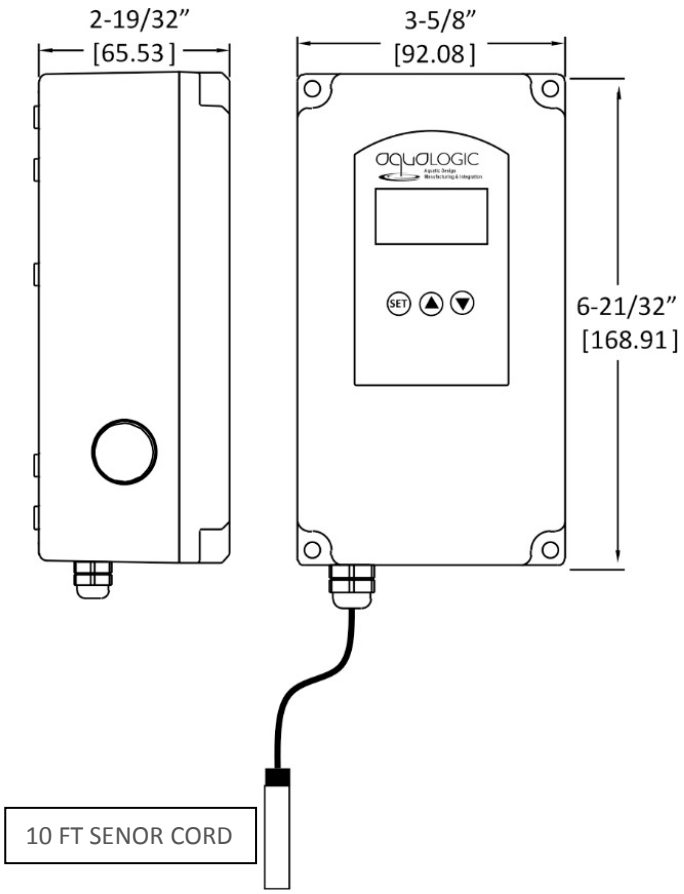
- **Er** – Memory error
- **--** Shorted –circuited probe error
- **ooo-** Open probe

SPECIFICATIONS

Probe Range:
NTC: -58 to 230°F (-50 to 110°C).
Input: NTC 10k Ω @ 77°F (25°C)
Control Type: On/Off.
Power Requirements: 12 to 24 AC-DC 50 / 60 Hz (±10%)
Power Consumption: 3.6VA.
Accuracy: ±1% Full Scale.
Display: 3 digits plus sign.
Resolution: 1° ≥ 100°.
Memory Backup: Non-volatile memory.
Ambient Temperature: 32 to 104°F (0 to 40°C).
Weight: 2.5 lbs (1134 g).
Front Protection: NEMA 4X (IP66).
Agency Approvals: CE, UL, cUL.

Controller power rating by model number.

Model	Input	SPDT Output Relay
DC24S	24 VAC	2 HP @ 240 VAC, 20A RL



Limited Warranty

This controller has a one (1) year limited warranty.

Aqua Logic, Inc. warrants this temperature controller to be free of defects in materials or workmanship for a period of one (1) year from the date of purchase. In the event of a defect or failure of this product, RETURN THE CONTROLLER WITH PROPER PACKAGING along with pre-authorized issued RMA number, proof of purchase and / or a copy of the original bill of sale to the address below, freight prepaid. COD shipments will be refused. After inspection, to ascertain that there is a defect due to material or workmanship and that the product is still under warranty, Aqua Logic will repair or replace the product at our discretion and return ship the unit, Our liability is limited to the cost of defective materials. In no case will Aqua Logic assume liability for consequential damage resulting from any failure. Not covered by this warranty are damage due to corrosion, abuse, accidental, alterations, unreasonable or improper use. Aqua Logic is not liable for payment or field repair work without prior written authorization.

Call or email Aqua Logic for a RMA number.

PH: 704.744.1391

email to: info@aqualogicinc.com

Return the controller to this address below with a copy of the RMA inside the box within 30 days to:

Aqua Logic, Inc.

Attn: Return Dept. RMA# (put your number here)

2806 Gray Fox Rd.

Monroe, NC 28110