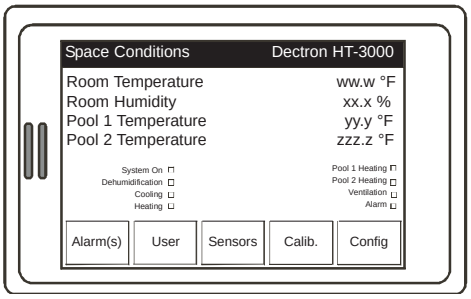
DRY-O-TRON®

Owner's Manual Appendix C13

HT-3000 CONTROLLER

Contents:



NOTE:

For your convenience this manual is organized into tasks arranged in a workable order. Most material relevant to a single task is on one page or a group of sequential pages.

Please feel free to attach copies of the appropriate pages to the task work-order.

The information in this appendix is subject to change without notice. The controller software is property of Dehumidified Air Solutions and shall not be redistributed without prior authorization.

Please refer to the unit's manual for any unit information not included in this appendix.

Product Description

The HT-3000 controller was designed to replace the HT-800 controller. It adds new capabilities compared to the HT-800 such as optional control of modulating heaters and refrigerant pressure transducers. It is able to work with most of the existing temperature sensors to make it easier to upgrade.

The return humidity and return temperature sensor will need to be replaced with the provided combination return humidity/temperature sensor. The HT-800 airflow sensor is not compatible with the HT-3000.

In addition to working with most of the existing temperature sensors, the HT-3000 is able to work with the optional voltage monitor, Firestat, Freezestat, and blower overload. The controller can show alarm messages instead of losing power if the inputs for those four faults are wired into separate inputs in the HT-3000. Refer to the provided wiring diagram as well as **Setup - Optional Input Setup** for additional details.

The HT-3000 is able to send 0-10VDC signals to modulate the evaporator bypass damper acutator as well as the modulating heating valve.

HT-3000 Controller

HT-3000 Display

Combination Return
Humidity/Temperature Sensor

Installation

WARNING

Risk of stray voltage.
Ground the unit using the grounding lug provided.
For natatorium usage, ground to the same grounding system used for other electrical devices associated with the circulation of pool water.
For natatorium usage, system bonding may also be required. Consult local codes.

NOTICE

Risk of wire insulation failure.
Risk of conduit damage, including loss of electrical continuity.
Seal all conduits attached to dehumidifiers. Failure to do so could allow water to build up inside conduits. Failure to do so could allow the transport of corrosive agents through conduits.

NOTICE

Risk of overheating electrical connections and wire insulation.
Use only copper wire to connect the unit. The power input lugs are not sized for use with other wire. For units with factory-supplied disconnects, follow instructions inside the disconnect.

NOTICE

Risk of overheating motors.
The unit complies with NEMA MG-1 and other standards for applied voltage. The applied average voltage should be within ±10% of the nameplate voltage. See ANSI C84.1. Phase voltages must be balanced within 2%.

NOTICE

Risk of incorrect voltage for 208V units.
For 208/230V units, a minimum of 187V is required for compressor starting at locked-rotor current (see NEMA MG-1).
The motors of a 230V unit are designed to run on 208V also. Some units may require that the 208V primary tap on the control transformer be connected and the 230V tap be disconnected and insulated. Some units may require a 208V transformer. See the wiring diagram for the unit.

NOTICE

Risk of failure to start.
Use properly sized wire. Refer to the unit nameplate for electrical ratings. Select minimum wire sizes according to applicable codes, with allowance for voltage drops. **Unit terminal voltage should be within ±10% of nameplate value under <u>all</u> conditions, including compressor starting.**

NOTICE

Risk of compressor damage. Risk of failure to start.
(three-phase units only)
Insure the proper phase sequence. All the motors in the unit are connected for the same phase sequence. Be sure the phase sequence is correct before completing the installation.
NOTE: The blower running direction can be used to test phase sequence.

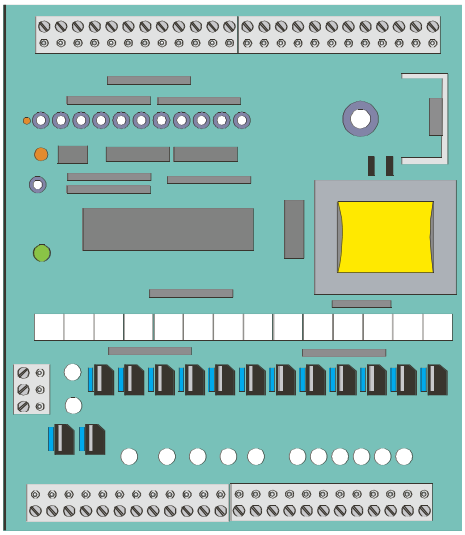
WARNING

Risk of burns, impacts, and other injury. Can cause injury or death.
Risk of property damage.
If blower rotation is to be checked, enable the blower(s) <u>only</u> by momentarily enabling the blower in controller software (see subsequent page **Startup - Enable Blower**. **<u>Never</u>** push in a contactor with a finger or with a tool.

For units with air-cooled air conditioning, wire the remote condenser according to the wiring diagram provided with it. <u>Insure that the fan motors turn in the correct direction</u>.

Controller Installation

The HT-3000 controller will replace the HT-800 controller system. To do this, the HT-800 controller will need to be removed.



To remove the HT-800,

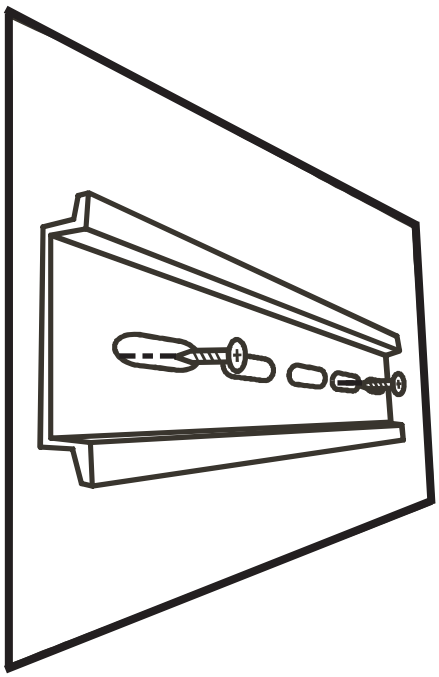
1. Turn off the power to the unit. Lockout and tagout as appropriate.

2. Open the electrical door and locate the circuit board similar to the right.

3. Are all the wires labelled? If not, label the wires with the installed terminal number. For example, wire 17 is the wire in terminal 17 of the I/O board.
   If the wires are labeled, proceed to the next step.

4. Using a flat-headed screwdriver, disconnect all wires from the circuit board. Wires that are connected to external power sources (remote heater, outdoor condenser, etc.) should be prevented from touching other wires when removed.

5. Detach the I/O board from its standoffs.



To mount the HT-3000 controller in the electrical panel, you will need some screws and an appropriate length of 35 mm Type-O DIN rail.

To mount the rail:

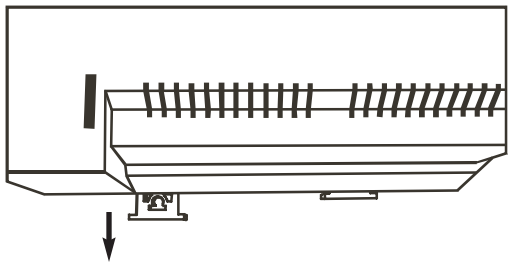
1. Place the rail horizontaly in the center of the space where the HT-800 circuit board was located. Make sure that the rail is placed so that there is a 1.6” gap on all sides of the controller

2. Drill holes for the mounting screws at the end slots and center slot of the rail.

3. Insert screws in the holes that were drilled. Self-tapping screws are recommended.

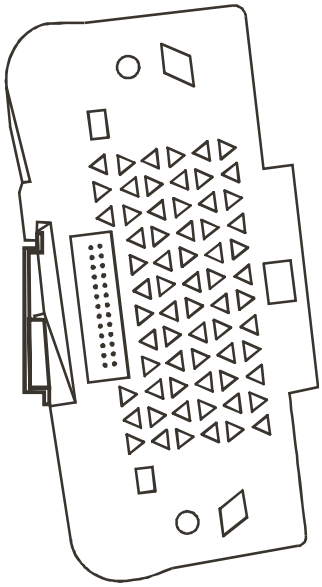
Installation Controller

The controller will mount on the DIN rail at the channel in the middle of the back of the controller. In order to mount the controller,



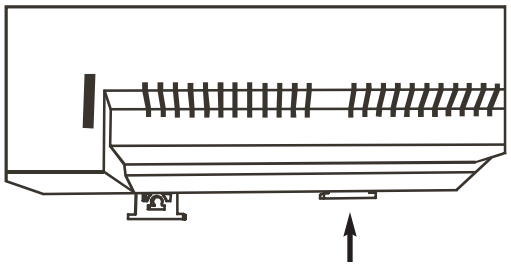
1. Pull the two clip-on locks outwards with a screwdriver. Removal of the screw wire connectors may be necessary.

2. Hang the controller on the rail so that the tabs on the side opposite of the clips hold on the DIN rail, as shown.



3. Allow the controller to sit flush against the DIN rail.

4. Push the clip-on locks inward to secure the controller to the DIN rail.



Now that the controller is mounted, the wires will need to be installed. Refer to the wiring diagram that came with the kit for details. Each labeled wire will be attached to the specified terminal on the controller.

A sample diagram can be found in this appendix on the page titled "**Appendix C13 - HT-3000 Wiring Diagram Installation**"

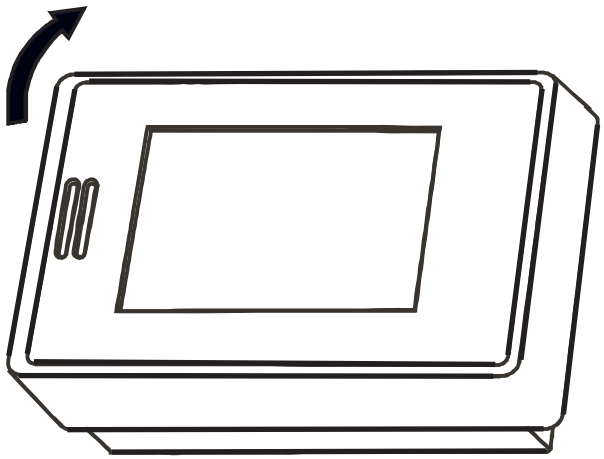
Touch Display Installation

The HT-3000 touch display will replace the existing HT-800 display.

In order to replace the HT-800 display on the electrical door of the unit,

1. Disconnect the wires connected to the HT-800 subbase.

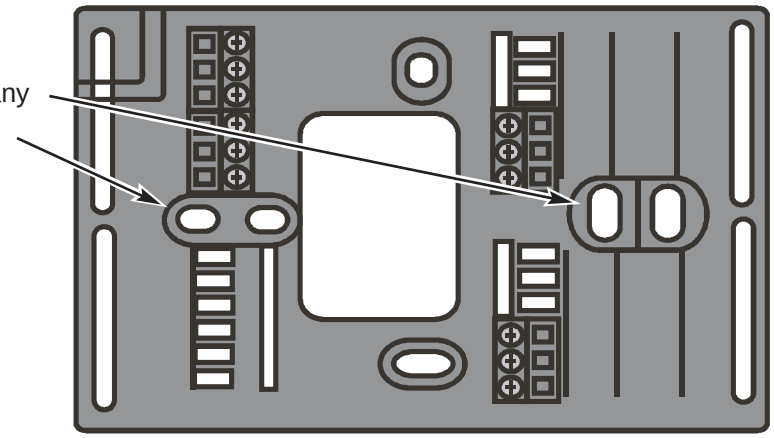
2. Remove subbase from the door.



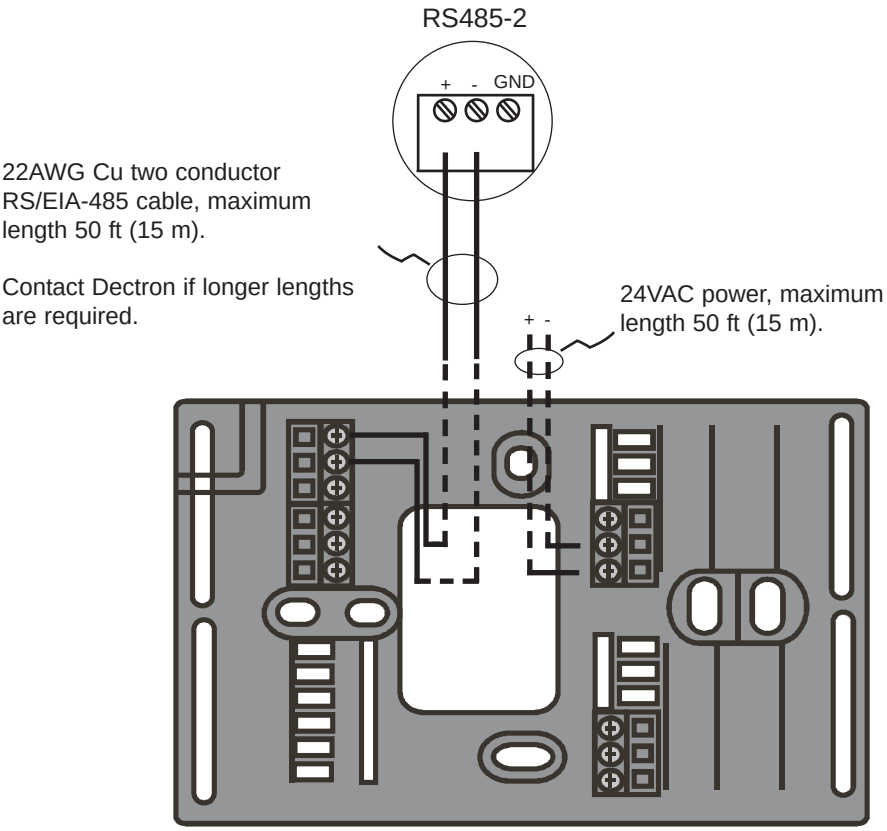
After the HT-800 display is removed, the HT-3000 display is ready for installation.

1. Gently pull the display by the slotted side to disconnect the tabs holding the display to the base and swing the display off.

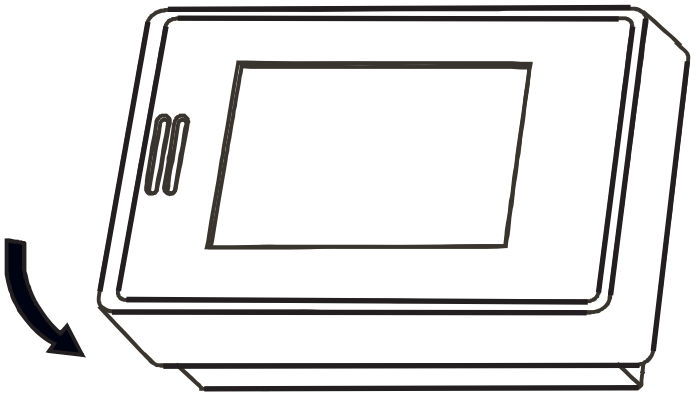
2. Mount subbase to the door of the unit using any of the screw holes.



The HT-3000 display will now need to be wired.
Ensure that power is disconnected from the unit



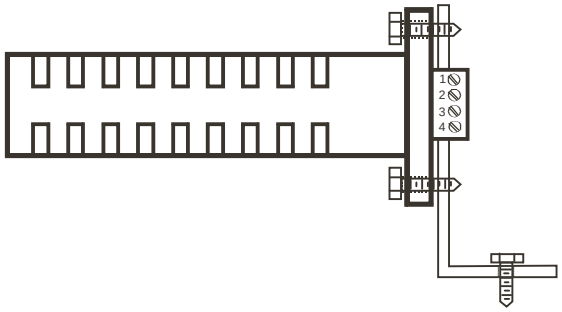
When finished, orient the display so that the pins line up with the sockets on the subbase. Place the tabs on the non-slotted side into the slots on the subbase and then swing the display so the tabs on the other side of the display lock into place.



Return Humidity/Temp Sensor Installation

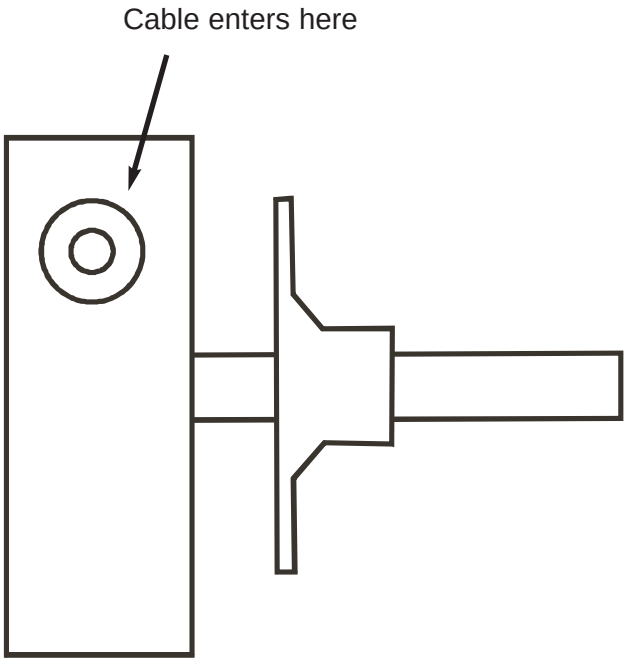
The HT-800 return humidity/temperature sensor cannot be used with the HT-3000. It will need to be replaced with the provided humidity/temperature sensor.

The HT-800 return humidity/temperature sensor is typically located between the return filter(s) and the evaporator coil. It will look like the image to the right with a sleeve over the vents in the sensor body. To remove it:



1. Ensure the power is disconnected.
2. Disconnect the wires from terminals 1 - 4.
3. Unscrew the sensor from the mounting bracket.

The mounting bracket is where the replacement sensor should be mounted if possible. Otherwise, create a new bracket to replace the existing bracket or put the sensor outside the filter rack with the probe in the air stream. Contact Dectron if other locations are necessary.



To install the replacement sensor:

1. Mount the replacement sensor so that the probe is in the return air stream.
2. Fasten probe to either the bracket or the unit cabinet.
3. Run a cable with 4 wires to the controller to the electrical panel.

Installation Return Humidity/Temp Sensor

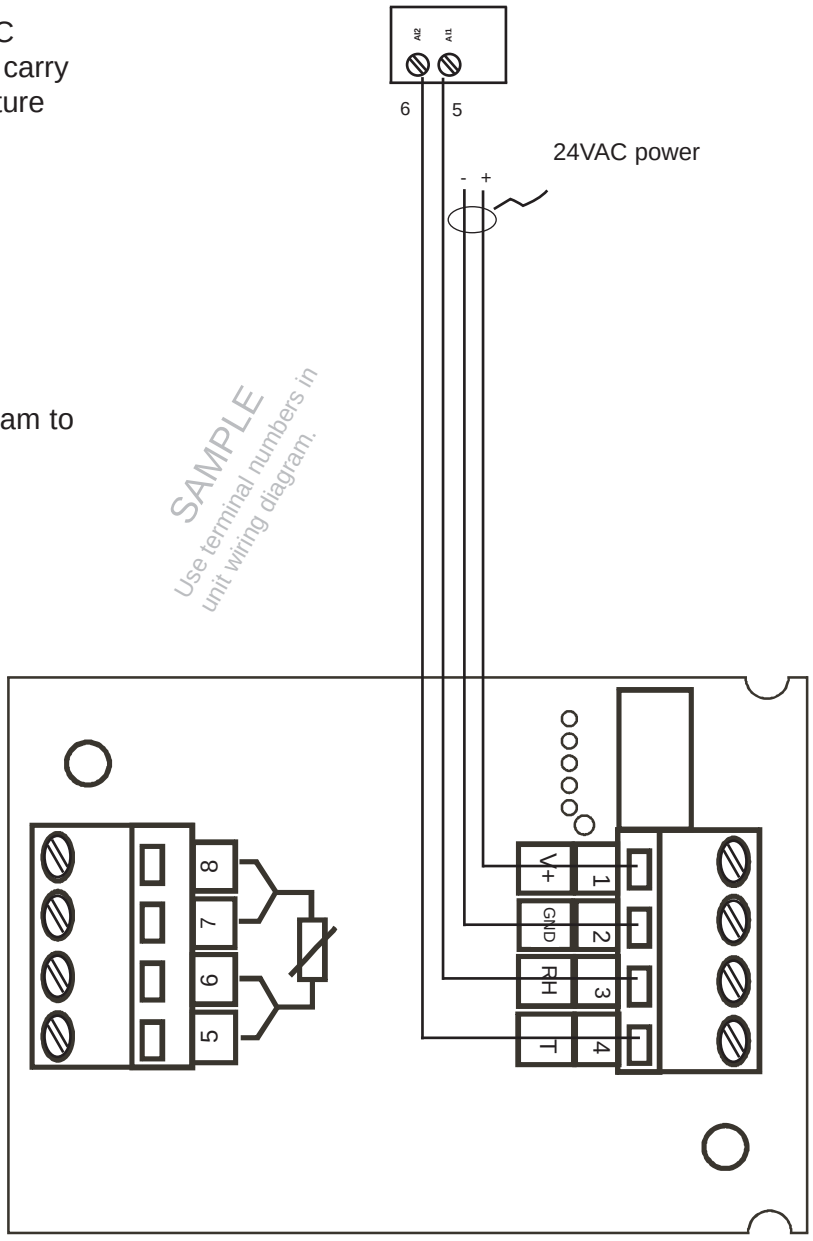
The sensor is powered from the 24VAC control transformer. A separate wire will carry the relative humidity and return temperature signals to the HT-3000.

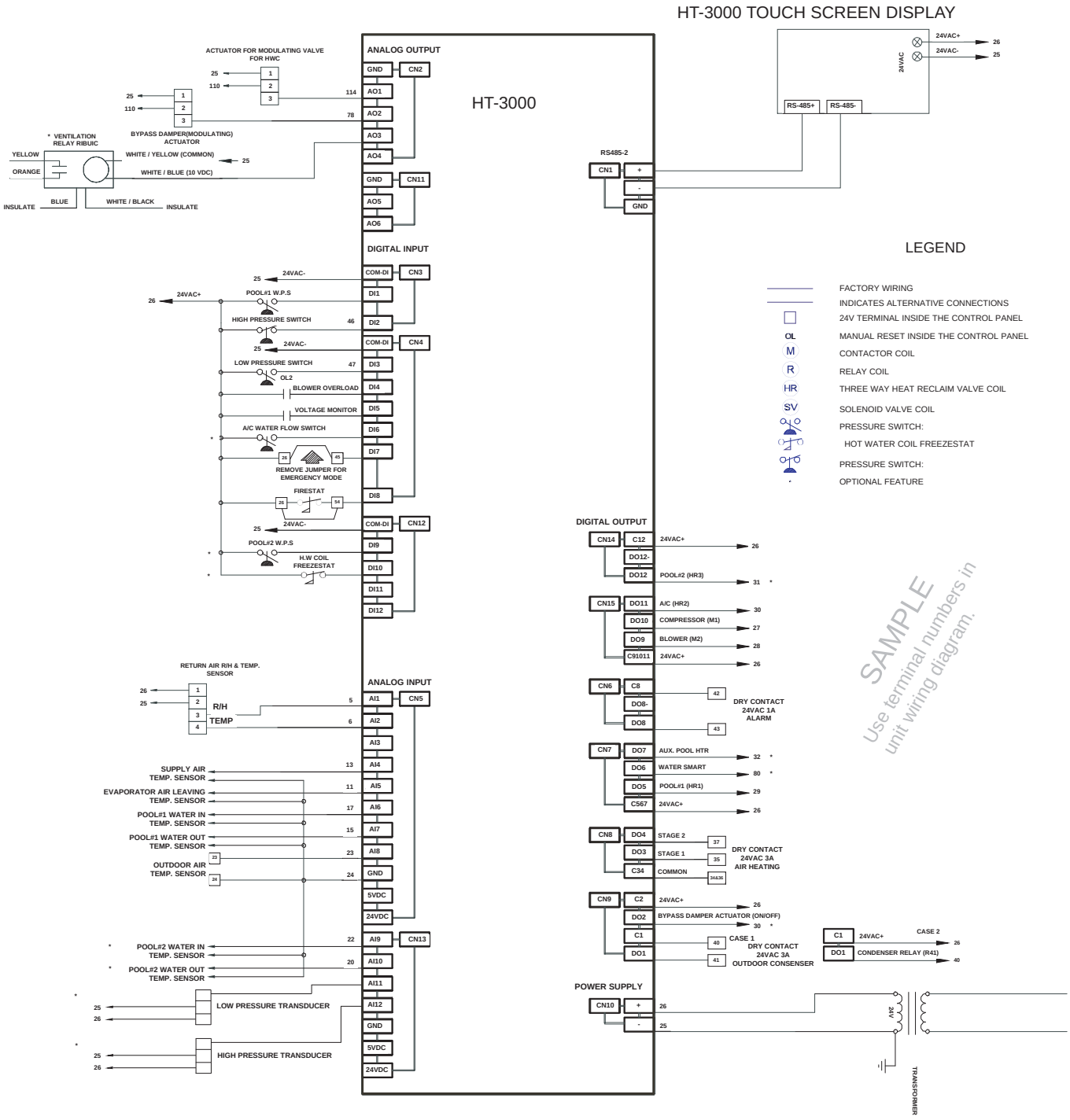
To wire in the sensor:

1. Remove the cover on the back of the sensor to expose the connectors as shown to the right of the page.

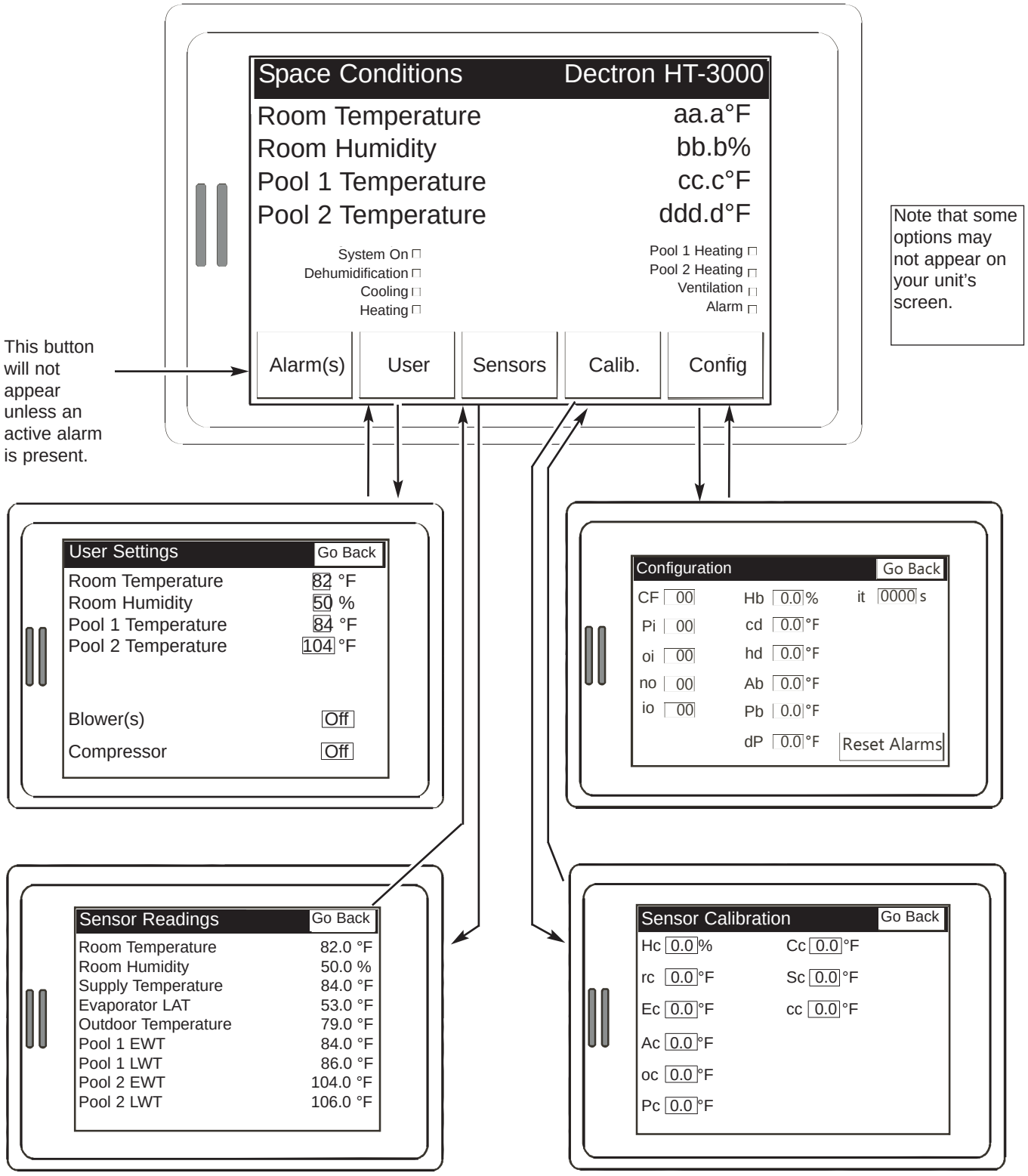
2. Connect wires as shown on the diagram to the right.

3. Close the cover.



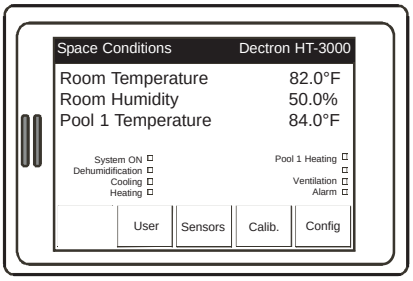

HT-3000 TOUCH SCREEN DISPLAY
24VAC+
24VAC-
24VAC
RS-485+
RS-485-
HT-3000
ANALOG OUTPUT
GND
CN2
AO1
AO2
AO3
AO4
GND
CN11
AO5
AO6
ACTUATOR FOR MODULATING VALVE FOR HWC
BYPASS DAMPER(MODULATING) ACTUATOR
* VENTILATION RELAY RIBUIC
YELLOW
ORANGE
BLUE
WHITE / YELLOW (COMMON)
WHITE / BLUE (10 VDC)
WHITE / BLACK
INSULATE
RS485-2
CN1
GND
DIGITAL INPUT
COM-DI
CN3
DI1
DI2
DI3
DI4
DI5
DI6
DI7
DI8
COM-DI
CN4
COM-DI
CN12
DI9
DI10
DI11
DI12
24VAC-
POOL#1 W.P.S
HIGH PRESSURE SWITCH
LOW PRESSURE SWITCH
OL2
BLOWER OVERLOAD
VOLTAGE MONITOR
A/C WATER FLOW SWITCH
REMOVE JUMPER FOR EMERGENCY MODE
FIRESTAT
POOL#2 W.P.S
H.W COIL FREEZESTAT
ANALOG INPUT
AI1
AI2
AI3
AI4
AI5
AI6
AI7
AI8
GND
5VDC
24VDC
CN5
AI9
AI10
AI11
AI12
GND
5VDC
24VDC
CN13
RETURN AIR R/H & TEMP. SENSOR
R/H
TEMP
SUPPLY AIR TEMP. SENSOR
EVAPORATOR AIR LEAVING TEMP. SENSOR
POOL#1 WATER IN TEMP. SENSOR
POOL#1 WATER OUT TEMP. SENSOR
OUTDOOR AIR TEMP. SENSOR
POOL#2 WATER IN TEMP. SENSOR
POOL#2 WATER OUT TEMP. SENSOR
LOW PRESSURE TRANSDUCER
HIGH PRESSURE TRANSDUCER
DIGITAL OUTPUT
CN14
C12
DO12-
DO12
24VAC+
POOL#2 (HR3)
CN15
DO11
DO10
DO9
C91011
A/C (HR2)
COMPRESSOR (M1)
BLOWER (M2)
24VAC+
CN6
C8
DO8-
DO8
DRY CONTACT 24VAC 1A ALARM
CN7
DO7
DO6
DO5
C567
AUX. POOL HTR
WATER SMART
POOL#1 (HR1)
24VAC+
CN8
DO4
DO3
C34
STAGE 2
STAGE 1
COMMON
DRY CONTACT 24VAC 3A AIR HEATING
CN9
C2
DO2
C1
DO1
24VAC+
BYPASS DAMPER ACTUATOR (ON/OFF)
CASE 1
DRY CONTACT 24VAC 3A OUTDOOR CONSENSER
C1
DO1
24VAC+
CONDENSER RELAY (R41)
CASE 2
POWER SUPPLY
CN10
+
-
24V
TRANSFORMER
LEGEND
FACTORY WIRING
INDICATES ALTERNATIVE CONNECTIONS
24V TERMINAL INSIDE THE CONTROL PANEL
OL MANUAL RESET INSIDE THE CONTROL PANEL
M CONTACTOR COIL
R RELAY COIL
HR THREE WAY HEAT RECLAIM VALVE COIL
SV SOLENOID VALVE COIL
PRESSURE SWITCH:
HOT WATER COIL FREEZESTAT
PRESSURE SWITCH:
OPTIONAL FEATURE
SAMPLE
Use terminal numbers in unit wiring diagram.

Setup Interface Map



Data subject to change without notice.

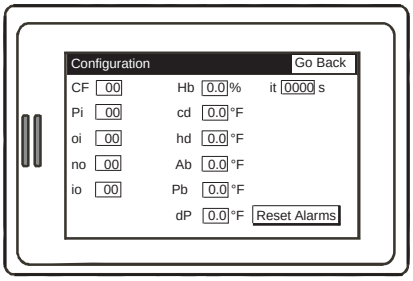
Temperature Display Mode / Language - CF Code Setup



Your HT-3000 controller comes pre-programmed from the factory for the conditions determined at time of sale. If it is desired to change the temperature display mode, e.g. from °F to °C, or the display language, e.g. from English to French, follow the steps below. Choose one of the display codes according to the chart.

To adjust:

1. Press [Config].
2. Enter the password, 17.
3. Press [Accept]. The screen will then show the main screen.
4. Press [Config] again. The screen will show the configuration screen.



5. Touch the number by CF.
6. Change the number per the table below:

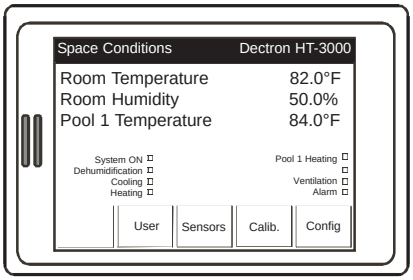
CF	existing display code	temperature units	language
Recommended-- Factory default	**6**	**°C**	English
	7	**°F**	English
	8	**°C**	French
	9	**°F**	French

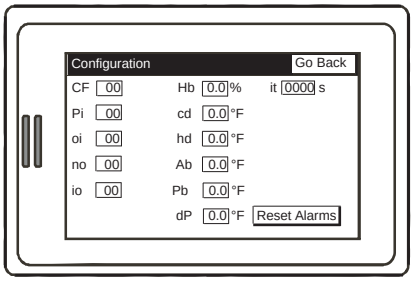
7. Press ↵ key to accept the value.
8. Press Go Back to return to the main screen.
9. Turn power off for 10 seconds and then turn power on.

The temperature display mode and/or language is now set.

Setup Pi Setup Set Pools
Set Pool Priority
Set Starting Delays

Your HT-3000 controller comes pre-programmed from the factory for the conditions determined at time of sale. If it is desired to change
a. the number of pools with water flow thorugh the DRY-O-TRON®, or
b. the heating priority of the pools, or
c. the starting delays, then
choose one of the display codes according to the chart below. For other conditions, consult Dectron or a Dectron-certified service technician.





To adjust:
1. Press Config .
2. Enter the password, 17.
3. Press Accept . The screen will then show the main screen.
4. Press Config again. The screen will show to the configuration screen.
5. Touch the number by Pi.
6. Change the number per the table below.

NOTE: Pool water should be connected to DRY-O-TRON DS/RS units in order to re-cycle the lost pool heat. Lack of such connection and the necessary adjustments below should be temporary.

	Pi	If the relative humidity is above 60% on compressor start, ignore evaporator temperature sensor and force pool heating mode for 20 minutes.	Pool water is connected to the DRY-O-TRON®.	Spa water is connected to the DRY-O-TRON®.	Give the spa heating priority.
Contact Dectron or a Dectron-certified technician before using other values.	**03**	**NO**	**NO**	**NO**	
	02	**NO**	**YES**	**NO**	
	01	**NO**	**NO**	**YES**	
	00	**NO**	**YES**	**YES**	**NO**
	04	**NO**	**YES**	**YES**	**YES**
	11	**YES**	**NO**	**NO**	
	10	**YES**	**YES**	**NO**	
	09	**YES**	**NO**	**YES**	
	08	**YES**	**YES**	**YES**	**NO**
	12	**YES**	**YES**	**YES**	**YES**

7. Press ↵ key to accept the value.
8. Press Go Back to return to the main screen.

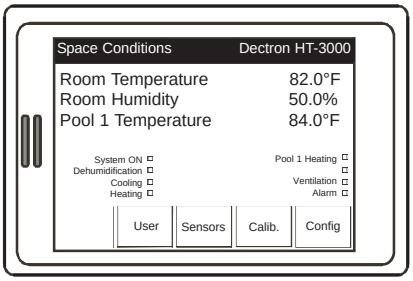
Note: The display will go back to the main screen after 2 minutes of no input.

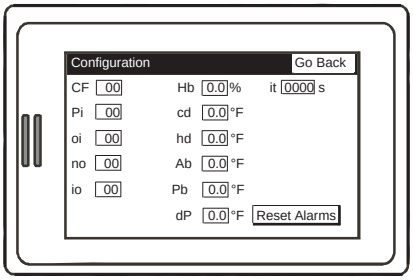
Set Auxiliary Pool Water Heater - oi Setup Setup

Set Outdoor Temperature Sensor

Set A/C Option

Your HT-3000 controller comes pre-programmed from the factory for the conditions determined at time of sale. If conditions have changed so that it is necessary to change whether or not the unit will have an auxiliary pool water heater connected (see **Installation - Wiring - Control Signals**), or whether or not the unit will have an outdoor air temperature sensor connected (see **Installation - Wiring - Control Signals**), or whether or not the unit has an airflow sensor, follow these steps. Choose one of the display codes according to the chart.





To adjust:

1. Press Config .
2. Enter the password, 17.
3. Press Accept . The display will then show the main screen.
4. Press Config again. The display will show the configuration screen.
5. Touch the number by oi.
6. Change the number per the table below.

Contact Dectron or a Dectron-certified technician before using other values.

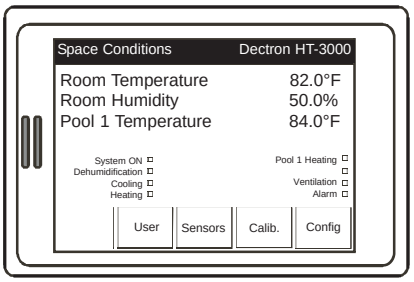
oi	auxiliary pool water heater	A/C option installed	outdoor temperature sensor option installed
00	**NO**	**NO**	**NO**
01	**NO**	**NO**	**YES**
04	**NO**	**YES**	**NO**
05	**NO**	**YES**	**YES**
48	**YES**	**NO**	**NO**
49	**YES**	**NO**	**YES**
52	**YES**	**YES**	**NO**
53	**YES**	**YES**	**YES**

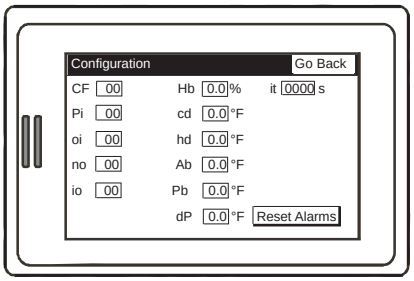
7. Press ↵ to accept the value.
8. Press Go Back to return to the main screen.

Note: The display will go back to the main screen after 2 minutes of no input.

Setup no Setup - Set Optional Hot Water Coil

Your unit may have an optional hot water coil with a modulating control valve. The HT-3000 is able to control this valve directly through a 0-10VDC output. If the valve wiring is changed to tie into the controller, then the “no” setting will need to be adjusted.





To adjust:

1. Press Config .
2. Enter the password, 17.
3. Press Accept . The display will then show the main screen.
4. Press Config again. The display will show the configuration screen.
5. Touch the number by no.
6. Change the number per the table below.

Contact Dectron or a Dectron-certified technician before using other values.

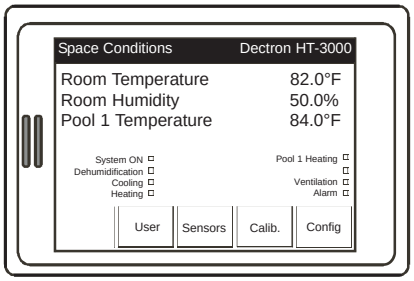
no	Unit made before July 1998	Hot water coil installed
26	NO	NO
58	NO	YES
31	YES	NO
63	YES	YES

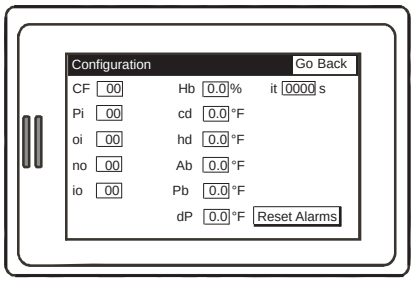
7. Press ↵ to accept the value.
8. Press Go Back to return to the main screen.

Note: The display will go back to the main screen after 2 minutes of no input.

Optional Input Configuration - io Setup

Certain faults such as fire alarm and optional voltage monitor would stop power to the HT-3000 microprocessor instead of provide an alarm. The HT-3000 is able to display an alarm instead of lose power. If the wiring is changed or if the unit is water-cooled instead of air-cooled, then the “io” setting will need to be adjusted.





To adjust:

1. Press Config .
2. Enter the password, 17.
3. Press Accept . The display will then show the main screen.
4. Press Config again. The display will show the configuration screen.
5. Touch the number by io.
6. Change the number per the tables below.

Contact Dectron or a Dectron-certified technician before using other values.

io	Fire alarm installed	Voltage monitor installed	Cooling water switch installed	Blower overload installed	Pressure trans-ducers installed
00	NO	NO	NO	NO	NO
16	NO	NO	NO	NO	YES
08	NO	NO	NO	YES	NO
24	NO	NO	NO	YES	YES
4	NO	NO	YES	NO	NO
20	NO	NO	YES	NO	YES
12	NO	NO	YES	YES	NO
28	NO	NO	YES	YES	YES
2	NO	YES	NO	NO	NO
18	NO	YES	NO	NO	YES
10	NO	YES	NO	YES	NO
26	NO	YES	NO	YES	YES
6	NO	YES	YES	NO	NO
22	NO	YES	YES	NO	YES
14	NO	YES	YES	YES	NO
30	NO	YES	YES	YES	YES

io	Fire alarm installed	Voltage monitor installed	Cooling water switch installed	Blower overload installed	Pressure trans-ducers installed
01	YES	NO	NO	NO	NO
17	YES	NO	NO	NO	YES
09	YES	NO	NO	YES	NO
25	YES	NO	NO	YES	YES
5	YES	NO	YES	NO	NO
21	YES	NO	YES	NO	YES
13	YES	NO	YES	YES	NO
29	YES	NO	YES	YES	YES
3	YES	YES	NO	NO	NO
19	YES	YES	NO	NO	YES
11	YES	YES	NO	YES	NO
27	YES	YES	NO	YES	YES
7	YES	YES	YES	NO	NO
23	YES	YES	YES	NO	YES
15	YES	YES	YES	YES	NO
31	YES	YES	YES	YES	YES

7. Press ↵ to accept the value.
8. Press Go Back to return to the main screen.

Note: The display will go back to the main screen after 2 minutes of no input.

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Enable Operation Startup

1. Apply electric power

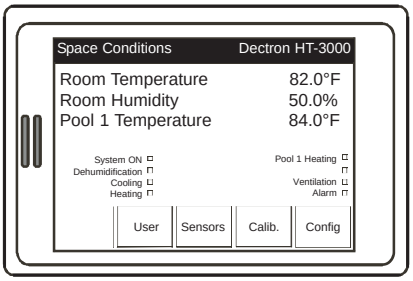
If the disconnect switch for the remote condenser is not already ON, turn it ON now. For units with a manual reset overload for the blower motor, press the **START** button on the overload. This starts the compressor crankcase heaters. **Allow no less than 12 hours of crankcase heater operation before enabling a compressor.**

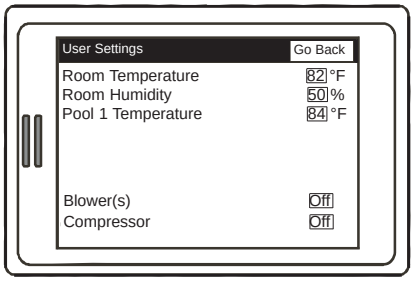
For units with service lights and/or receptacles, turn ON the disconnect switch for the DRY-O-TRON® service circuit.

2. Start blower

On some units, the blower runs whenever electric power is applied to the unit. On other units, it will be necessary to:

1. Press [User] on the controller display.
2. Press [Off] to the right of "Blower(s)"
3. Press ⌄ to change the setting to [Auto].
4. Press ↵ to accept the change.





The blower will start after a short delay.

If the blower does not turn the proper direction, a qualified person should disconnect electric power and interchange any two of the branch circuit wires at the DRY-O-TRON® input lugs (three-phase units only). **Do <u>not</u> move any factory installed wires.**

3. Check Air Distribution

Be sure the air flow rate is correct before proceeding. Be sure that the air flow at each diffuser is correct. See **Installation - Air Distribution - Adjust Airflow**.

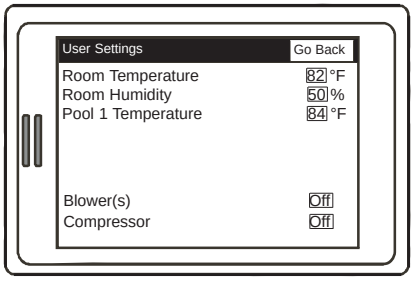
DO NOT PROCEED UNLESS THE ELECTRIC POWER HAS BEEN APPLIED TO THE UNIT AND THE BLOWER OVERLOAD HAS BEEN ON FOR AT LEAST 12 HOURS.

This is necessary for the compressor crankcase heater function.

4. Enable compressor 1

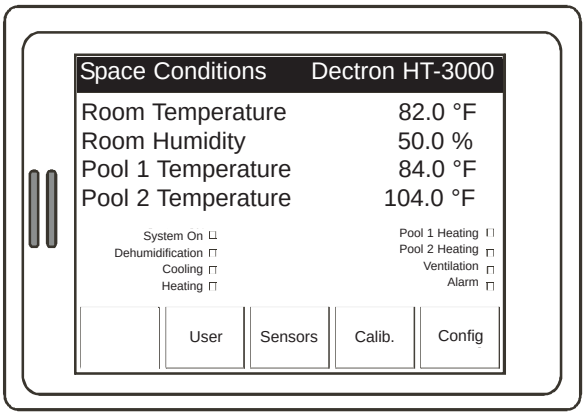
For units with external overloads for the compressor, press **START** on the overload. For other units, turn ON the compressor emergency switch. Afterwards,

1. Press [User] on the controller display.
2. Press [Off] to the right of "Compressor"
3. Press ⌄ to change the setting to [Auto].
4. Press ↵ to accept the change.



Startup Read Sensors

Indoor temperature and relative humidity are displayed by default. Pool inlet temperatures are displayed if the appropriate options are selected.

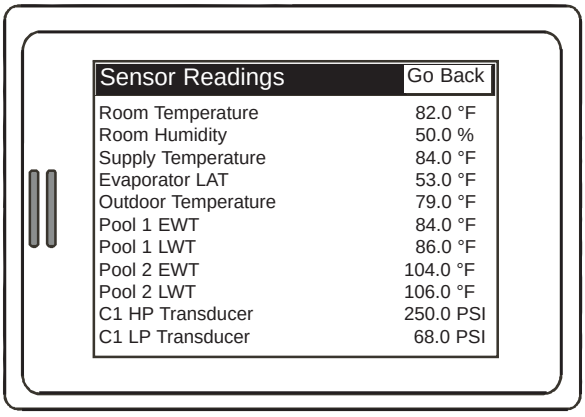


To see additional sensor readings, press Sensors

The display will show the Sensor Readings screen. Note that some sensors may not appear if the appropriate options are selected.

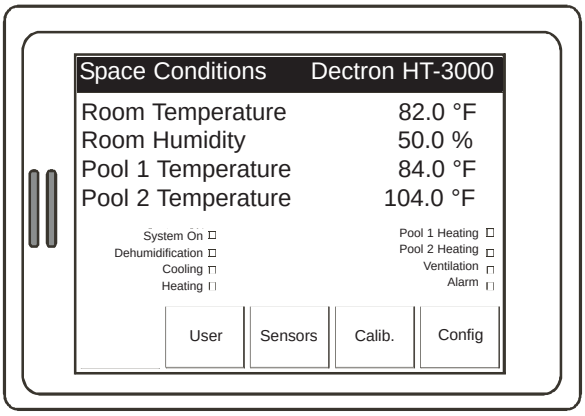
When finished, press Go Back .

Note: The display will go back to the main screen after 2 minutes of no input.



Startup View and Change Set Points

Note that some options may not appear on your unit's screen.



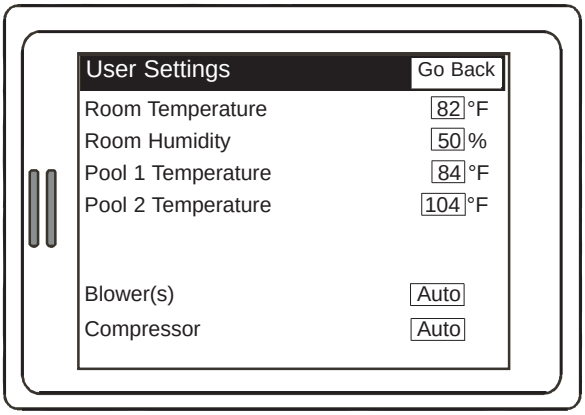
Some sensors have set points associated with them. To view and/or change these set points, press [User].

To change a set point:

1. Touch the number by the set point you wish to change.
2. Enter the desired set point in the pop-up window.
3. Press ↵ to accept the new set point.

Repeat steps 1 - 3 step for any other set points to be changed.

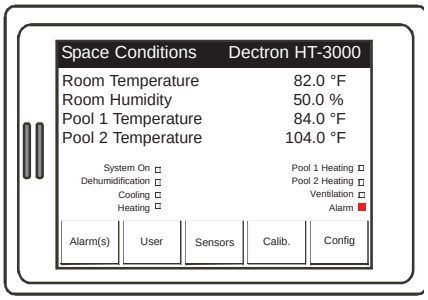
At any time, you may stop touching the display, and the display will return to the main screen after a delay.



Operation Service Messages

In the event of a failure, the red light will appear by “Alarm” on the main screen and the “Alarm(s)” button will appear. Press [Alarm(s)] to view the alarm messages.

If the cause of the alarm disappears, the alarm light will go OFF and the [Alarm(s)] button will disappear from the main screen.



Service Messages, HT-3000

Blower Overload = Main blower overload tripped

C1 High Pres = Compressor 1 high pressure

C1 HP Transducer = Compressor 1 high pressure transducer fault

C1 LP Transducer = Compressor 1 low pressure transducer fault

Cooling Water Flow = Loss of A/C water pressure

Emergency Mode = When the Emergency Jumper between terminals 26 & 45 of the controller board is disconnected, a 48-hour emergency cycle begins. The fan is ON, the unit runs in dehumidification for 52 minutes, followed by 20 minutes OFF. High pres sure, low pressure, and outlet water temperature limits remain in effect. If the return temperature sensor is still working, cooling(if applicable) or heating mode may operate as required. Pool heating mode is disabled.

Evap 1 Temp = Evaporator air temperature sensor fault

Fire Alarm = Fire alarm input open.

Freeze Stat = Hot water coil freezing protection input open.

Loss of Comm = The display has lost communication with the controller

Outdoor Temp = Outdoor air temperature sensor fault

Pool 1 EW Temp = Inlet pool 1 water temperature sensor fault

Pool 1 Flow = Pool 1 water pressure fault. Pool 1 heating mode disabled.

Pool 1 LW Temp = Outlet pool 1 water temperature sensor fault

Pool 1 Too Hot = Pool 1 leaving water temperature over 120°F

Pool 2 EW Temp = Inlet pool 2 water temperature sensor fault

Pool 2 Flow = Pool 2 water pressure fault. Pool 2 heating mode disabled.

Pool 2 LW Temp = Outlet pool 2 water temperature sensor fault

Pool 1 Too Hot = Pool 2 leaving water temperature over 120°F

Return Humidity = Return humidity sensor fault

Return Temp = Return temperature sensor fault

Supply Temp = Supply air temperature sensor fault

Voltage Monitor = Input power monitor input open.

Diagnostics - Controller Operation

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Blower Overload	1. Cabinet doors left open	• **Close all cabinet doors. Reset overload.**
	2. Excessive airflow	• **Be sure airflow is as specified on unit nameplate.**
	3. Overload device manual switch is OFF	• Check switch position visually. • **Press the OFF switch, then press the ON switch.**
	4. Blower motor current is too high	• Check that the blower motor current is not higher than the unit nameplate value. • **Adjust the branch circuit voltage to the nameplate value ± 10%.** • **Adjust the blower sheaves to produce design airflow.**
	5. Unexpected open switch circuit	• Check for loose terminals on overload device auxiliary switch. • **Tighten as necessary.** • Check for continuity of overload device auxiliary switch. • **Replace as necessary.**
C1 High Pres **High pressure**	1. High return air temperature	• Check CSA/ETL label for unit design temperatures. • **Adjust set points accordingly.**
	2. Dirty reheat coil	• Check for proper air filters on return air and on outdoor air intake. • **Clean coil and replace any missing filters.**
	3. Corroded fins on reheat coil	• High concentration of chemicals, chemicals stored in mechanical room, large fluctuations in pool water chemistry • **Insure proper precautions are taken to protect unit from corrosion due to pool chemicals.** • Return air grille too close to whirlpool

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 High Pres **High pressure**	3. Corroded fins on reheat coil (cont.)	• **Due to the nature of whirlpools, (i.e., hot and very active), it is virtually impossible to maintain a proper water balance. These types of pools do not maintain an effective e chlorine level for very long. As a result the formation of chloramines (a corrosive gas given off when chlorine levels are too low) occurs rapidly and frequently. The concentrated chloramines above the whirlpool are then drawn directly into the DRY-O-TRON® where they attack the aluminum fins of the coil. Evaporated body oils are also present in the hot air above a whirlpool. These oils will collect on the inside of the return duct as well as on filters and coils, resulting in a sticky coating. It is for these reasons that the return air grill should be located as far as possible from the whirlpool.**
	4. Low air flow	• ΔT across evaporator coil must be between 30°F and 35°F. • **Adjust variable pulley accordingly.**
	5. Low water flow	• Check water-pressure switch adjustment. • **Adjust water-pressure switch. See Startup - Pre-Startup Adjustments - Adjust Water Flow Rate.** • Check circulating pump for DRY-O-TRON®. • **The main filter pump is usually sized for pool water filtration and sanitation. If there is any doubt that the main filter pump cannot develop the total head to assure the flow requirement or if the DRY-O-TRON® is installed more than 8 feet high with respect to the pool water surface, a separate circulating pump for the DRY-O-TRON® is required. Refer to the Owner's Manual for flow requirement.**
	6. Refrigerant overcharge	• Check CSA/ETL label for proper charge.

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 High Pres **High pressure**	6. Refrigerant overcharge (cont.)	• **Verify the charge of units with air-cooled air conditioning. This check is best performed in cold weather.** **1. Jumper the contact for the outdoor air-cooled condenser fans. (Make sure all fans are running.)** **2. Force the compressor to run in either pool heating or dehumidification modes. (A/C must not be allowed to operate.** **3. Allow the unit to run in this fashion for approximately 2 hours. (This will force the outdoor condenser to flood with liquid refrigerant.)** **4. Remove gas until bubbles appear in the sightglass.** **5. Recharge unit until sightglass is clear.** • **All other units, remove refrigerant until bubbles appear in sight glass, then recharge to clear sight glass in all modes of operation.**
	7. Jammed 3-way valve	• Verify that the three-way valve may be jammed: 1. Force the suspect valve to operate and check for changes in operating temperatures and pressures. If no changes occur, then the valve is completely jammed and must be replaced. 2. If the unit runs fine in pool heating and/or A/C, trips on high pressure in dehumidifi cation mode, and also runs with higher than normal pressures in A/C alone, then the pool heating three-way valve is not shifting completely out of pool heat. (This is assuming that no other cause for a high-pressure trip can be found. 3. If the unit runs well in pool heating and A/C, trips on high pressure in dehumidification, and runs higher than normal pressures in pool heat alone, then the A/C three-way valve is not shifting completely out of air conditioning. • **Replace the defective valve.**
	8. ORI-6 valve (water heating intensity, if equipped) setting too high	• Unit cools air while in pool heating. • **Turn valve adjustment counter clockwise until spindle is flush with housing. Turn valve clockwise approximately 7.5 turns. While in pool heating, supply-air temperature should be the same as return air temperature ± 2°F. (Fine tune valve accordingly).**

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 High Pres **High pressure** **...continuation**	9. Undersized receiver (Unit trips in summer only)	• Check outdoor condenser line length one way, as well as line sizes and check to make sure they do not exceed the indicated maxima on the CSA/ETL label. • **Contact the factory if the line length or size is greater than that specified.**
	10. Closed ball valve(s)	• Verify all ball valves are open. • **Open all valves.**
	11. Outdoor condenser dirty (Unit trips in A/C only)	• Inspect outdoor coil. • **Clean coil as necessary.**
	12. Outdoor condenser fans not running (Unit trips in A/C only)	• Check that condenser has power. • **Apply power to outdoor condenser, provided it has not been disconnected for service.** • Check dry contact on HT-3000 controller board (terminal 40-41) while in Cooling mode. • **If contact is open, replace controller board.** • Check control wiring for outdoor condenser. • **Repair any missing or damaged wiring.** • Check outdoor condenser fan contactor. • **Replace any defective or worn parts.** • Check outdoor condenser fan motors. • **Replace any defective motors**.
	13. Relay for A/C three-way valve has failed ON.	• Check if 3-way valve remains energized when A/C call is satisfied. • **Replace HT-3000 I/O board if necessary.**
	14. Defective high-pressure switch	• Switch opens at less than rated pressure. • **Replace any defective switches.**

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 Low Pres **Low pressure**	1. Low return-air temperature	• Check CSA/ETL label for design temperatures. • **Adjust set points accordingly. For air temperatures below 76°F the bypass damper should be closed (if so equipped).** • Check auxiliary air-heating system for proper operation. • **Repair air-heating system if necessary.** • In heating mode, check auxiliary air heat output on HT-3000 controller board. • **If output is OPEN replace controller board.**
	2. Return air too dry (Below 40%R.H.)	• Check CSA/ETL label for design humidity. • **Adjust set point accordingly.** • Check volume of any unit mounted outdoor air intake. (Max. allowable is 15% of total flow unless unit is specifically designed for a greater amount.) • **Adjust outdoor-air intake volume accordingly.**
	3. Low refrigerant charge (low pressure failure may only occur in winter)	• Check system for leaks. • **Repair any leaks**. • Check sight glass for bubbles. • **Charge to clear sight glass in all modes. Note: For units with A/C, charge will have to be verified during winter when outdoor condenser is flooded.**
	4. Low air flow	• Check for blocked air filters. • **Replace with same type and size.** • Check for slipping or broken fan belt. • **Adjust tension or replace with same size and type.** • Check for duct restriction. • **Remove restriction.**
	5. Blocked liquid line filter/drier	• If bubbles are visible in sight glass, measure liquid temperature on either side of filter/drier. A drop of more than 2° is unacceptable. • **Replace liquid line filter/drier.**
	6. Closed liquid-line ball valve (If so equipped)	• Check that all ball valves are fully open. • **Open any closed or partially closed valves.**

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 Low Pres **Low pressure ...continuation**	7. Closed suction-line rotolock valve (If so equipped)	• Check on suction side of compressor. • **Open valve fully.**
	8. ORI-6 valve (water heating intensity, if equipped) setting too high	• Unit appears to be fully charged but continues to cut out on low pressure. • **Turn valve adjustment counter- clockwise until spindle is flush with housing. Turn valve clockwise approximately 7 1/2 turns. While in pool heating mode, supply-air temperature should be the same as return-air temperature ±2°F. (Fine tune valve accordingly)**
	9. Defective low-pressure switch	• Switch opens at higher than rated pressure. • **Replace defective switch.**
	10. Defective power head on thermal-expansion valve	• Place sensing bulb in cold water, and then warm it up in your hands. A rapid suction-line temperature change should occur. If not, valve is defective. • **Replace valve.**
Cooling Water Flow **Cooling water-pressure fault (Units with water cooled A/C only)**	1. Low A/C water flow	• Check pumps and balancing valves for proper adjustment. • **Re-establish proper water flow as soon as possible.**
	2. Defective or wrongly adjusted water pressure switch	• Make sure switch closes when adequate water flow is present. • **See Startup - Adjust Water Flow Rate.**

Diagnostics - Controller Operation

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Emergency Mode	Manually selected by removing the Emergency Jumper	• **Unit will operate in emergency mode. Replace failed HT-3000 component as soon as possible.** **Emergency Sequence:** **When the Emergency Jumper is disconnected, an Emergency Cycle is enabled. After the emergency jumper is removed, there will be a 30-second delay before anything happens if the blower isn't already on. The blower will run continuously even if it was originally OFF. If the blower had been off, there will be a 30-second delay and then the compressor will begin a cycle of 50 minutes ON and 20 minutes OFF. This cycle will continue for 48 hours, allowing time for the replacement of the failed HT-3000 component.** **During this cycle the blower motor will be protected by the overload. The compressor will be protected by the overload and by pressure and temperature limits as during normal operation. If the return temperature sensor is working, then the unit may enter cooling or heating mode as required.**
Fire Alarm	1. Fire or smoke present 2. Fire alarm (by others) has been tested but not completely reset 3. Broken fire alarm wiring (by others) 4. Shorted fire alarm wiring (by others)	• **Be sure there is no fire.** • **Contact your fire alarm technician.** • **Contact your fire alarm technician.** • **Contact your fire alarm technician.**
Freeze Stat	1. Heating fluid (water or steam) too cold 2. Inadequate flow of heating fluid (water or steam) 3. Excessive outdoor airflow rate 4. Outdoor air temperature unexpectedly low 5. Return air filters too dirty 6. Defective freezestat	• **Be sure heating source is operating and properly adjusted.** • **Be sure flow rates are as specified.** • **Be sure outdoor air intake rate is as specified.** • **Outdoor air intake may have to be reduced during coldest weather.** • **Replace with clean filters.** • **Check that the air temperature at the heating coil is approximately 40°F when the freezestat trips.**

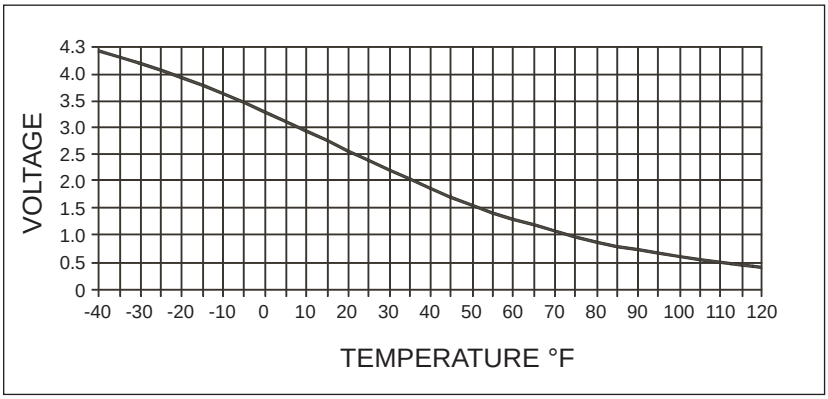
SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Loss of Comm **Loss of communication between the display and the controller**	1. Broken or loose wire between HT-3000 controller and I/O board	• If HT-3000 is remote mounted: Remove controller and mount it on unit. Remove remote wires on terminals + & - on CN10.
	2. Corrosion at the HT-3000 connector pins or controller board screw terminals (+ & - on CN10)	• **Repair any damaged or loose wires.** • **Clean pins, terminals and wires**
	3. Defective controller board	• **Contact Dectron or a Dectron-certified technician.**
	4. Defective HT-3000 display	• **Contact Dectron or a Dectron-certified technician.**
Pool 1 Flow **Pool water-pressure fault**	1. Low pool water fault.	• Check pool pumps and balancing valves for proper adjustment. • **Re-establish proper water flow as soon as possible.**
	2. Defective or wrongly adjusted water-pressure switch	• Make sure switch closes when adequate water flow is present. • **See Startup - Adjust Water Flow Rate.**
Pool 1 Too Hot **Pool 1 leaving water temperature over 120°F**	1. Low water flow	• Verify that all pumps are running and balancing valves are set correctly. • **Make any necessary adjustments.**
	2. Sensor out of calibration	• Verify that water temperature leaving DRY-O-TRON® is really over 120°F. • **If water is not over 120°, compare actual temp. with that displayed on HT-3000. If the difference is less than 10°F re-calibrate sensor. See configuration and calibration page of owners manual for leaving pool water sensor calibration. (Cc number)**
	3. Sensor located too close to refrigerant hot-gas line.	• **Move sensor further away from refrigerant line. (Move sensor outside unit enclosure if necessary).**
	4. Defective sensor	• **If water is not over 120°, compare actual temp. with that displayed on HT-3000. If the difference is greater than 10°F replace sensor.**

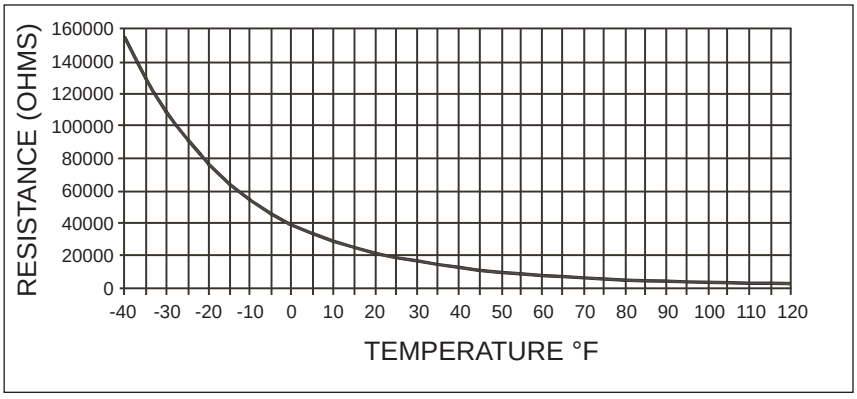
Data subject to change without notice.

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Pool 2 Flow **Pool water-pressure fault**	1. Low pool water flow.	• Check pool pumps and balancing valves for proper adjustment. • **Re-establish proper water flow as soon as possible.**
	2. Defective or wrongly adjusted water-pressure switch	• Make sure switch closes when adequate water flow is present. • **See Startup - Adjust Water Flow Rate.**
Pool 2 Too Hot **Pool 2 leaving water temperature over 120°F**	1. Low water flow	• Verify that all pumps are running and balancing valves are set correctly. • **Make any necessary adjustments.**
	2. Sensor out of calibration	• Verify that water temperature leaving DRY-O-TRON® is really over 120°F. • **If water is not over 120°, compare actual temp. with that displayed on HT-3000. If the difference is less than 10°F re-calibrate sensor. See configuration and calibration page of owners manual for leaving pool water sensor calibration. (cc number)**
	3. Sensor located too close to refrigerant hot-gas line.	• **Move sensor further away from refrigerant line. (Move sensor outside unit enclosure if necessary).**
	4. Defective sensor	• **If water is not over 120°, compare actual temp. with that displayed on HT-3000. If the difference is greater than 10°F replace sensor.**

Operation Diagnostics - Controller

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Outdoor Temp outdoor temperature sensor fault	1. Sensor wires broken or shorted to ground 2. Defective sensor 3. Defective controller board	• **Measure the true temperature at the suspected sensor with a known accurate thermometer.** • **Measure DC voltage between sensor terminals on controller board (Note A, this page).** • **Compare the voltage and the true temperature using the upper chart at left. If the voltage agrees with the true temperature, replace controller board. If the voltage and true temperature do not agree, proceed to next step.** • **Disconnect electrical power from the unit.** • **Remove the wires for the suspected sensor from the controller board terminals (see unit wiring diagram).** • **Measure the resistance of the sensor circuit (Note B, this page).** • **Compare the resistance and the true temperature using the lower chart at left. If the resistance agrees with the true temperature, consult Dectron. If the resistance and true temperature do not agree, proceed to next step.** • **Disconnect the sensor from the extension wires.** • **Measure the resistance of the sensor.** • **Compare the resistance and the true temperature using the lower chart at left. If the resistance agrees with the true temperature, repair or replace the wires connecting the sensor to the controller board. If the resistance and true temperature do not agree, replace the sensor.** • See **Sensor Calibration.**





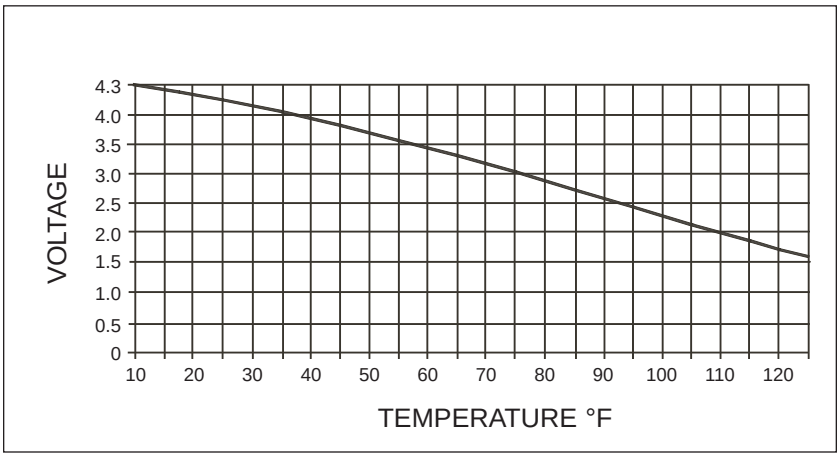
Change-over set point: Above room dew point the optional air conditioning is on.
Below room dew point the ventilation is on.

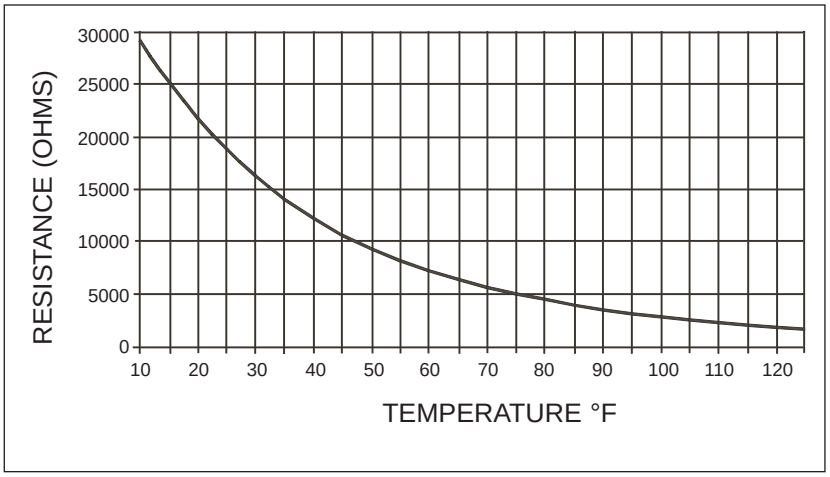
Notes:

A. When measuring the sensor voltage, put the negative (black) voltmeter probe on terminal - on CN10 of the controller board. Refer to the unit wiring diagram for appropriate terminal numbers.

B. Disconnect sensor from controller board before measuring sensor resistance.

SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Evap 1 Temp **evaporator sensor fault** **Pool 1 EW Temp** **pool 1 entering water sensor fault** **Pool 1 LW Temp** **pool 1 leaving water sensor fault** **Pool 2 EW Temp** **pool 2 entering water sensor fault** **Pool 2 LW Temp** **pool 2 leaving water sensor fault** **Supply Temp** **supply sensor fault**	1. Sensor wires broken or shorted to ground 2. Defective sensor 3. Defective controller board	• **Measure the true temperature at the suspected sensor with a known accurate thermometer.** • **Measure DC voltage between sensor terminals on controller board (Note A).** • **Compare the voltage and the true temperature using the upper chart at left. If the voltage agrees with the true temperature, replace controller board. If the voltage and true temperature do not agree, proceed to next step.** • **Disconnect electrical power from the unit.** • **Remove the wires for the suspected sensor from the controller board terminals (see unit wiring diagram).** • **Measure the resistance of the sensor circuit (Note B).** • **Compare the resistance and the true temperature using the lower chart at left. If the resistance agrees with the true temperature, consult Dectron. If the resistance and true temperature do not agree, proceed to next step.** • **Disconnect the sensor from the extension wires.** • **Measure the resistance of the sensor.** • **Compare the resistance and the true temperature using the lower chart at left. If the resistance agrees with the true temperature, repair or replace the wires connecting the sensor to the controller board. If the resistance and true temperature do not agree, replace the sensor.** • See **Sensor Calibration.**



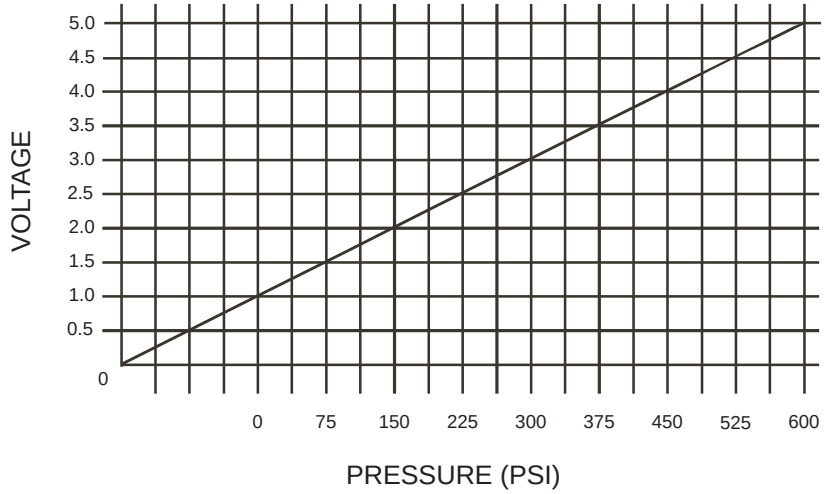


Notes:

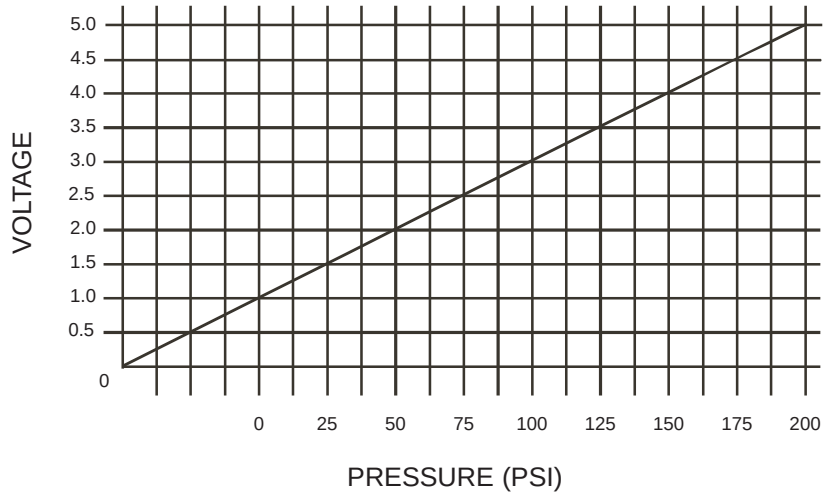
A. When measuring the sensor voltage, put the negative (black) volt meter probe on terminal - on CN10 of the controller board. Refer to the unit wiring diagram for appropriate terminal numbers.

B. Disconnect sensor from controller board before measuring sensor resistance.

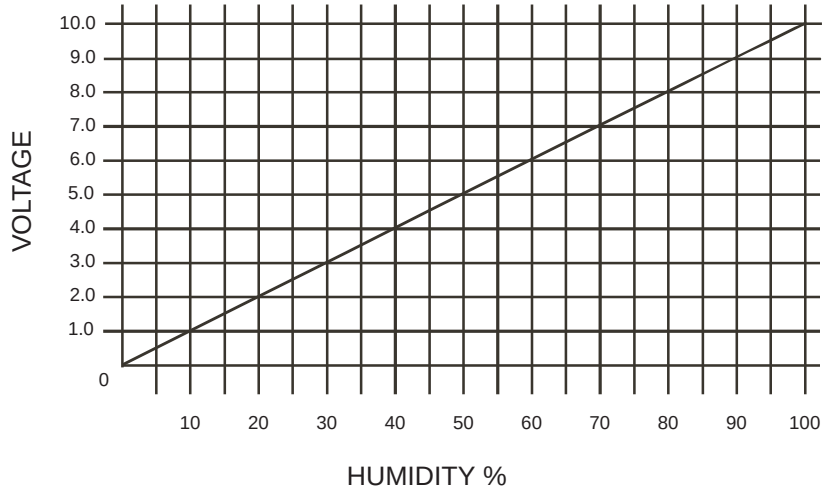
SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 HP Transducer **Compressor 1 High Pressure Transducer fault**	1. Sensor cable disconnected.	• **Be sure the sensor cable is properly connected to both the sensor and the controller.**
	2. Sensor wires broken or shorted	• **Disconnect the cable from the sensor and the from the controller and be sure the resistance of the cable is above 1 million ohms. Connect the ends of the cable wires together at the sensor end and be sure the cable resistance is less than 5 ohms. If either condition fails, replace the cable.**
	3. Defective sensor or controller	• **Measure the refrigerant pressure at the sensor with a known-accurate instrument.** • **Measure the DC voltage between AI12 and GND on CN13.** • **Compare the voltage and the refrigerant pressure using the chart at left. If the voltage agrees with the refrigerant pressure, replace controller board. If the voltage and refrigerant pressure do not agree, replace the sensor.**



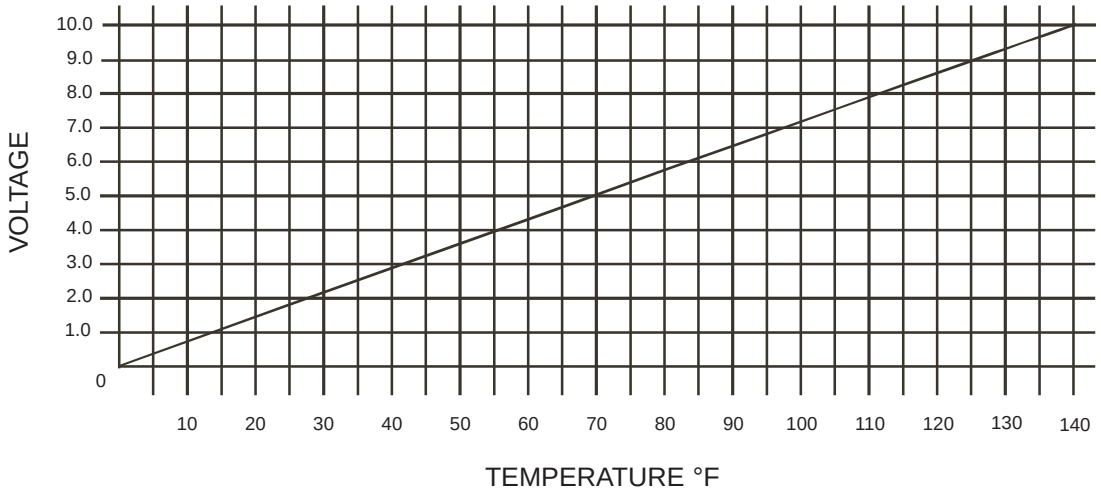
SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
C1 LP Transducer **Compressor 1 Low Pressure Transducer fault**	1. Sensor cable disconnected.	• **Be sure the sensor cable is properly connected to both the sensor and the controller.**
	2. Sensor wires broken or shorted	• **Disconnect the cable from the sensor and the from the controller and be sure the resistance of the cable is above 1 million ohms. Connect the ends of the cable wires together at the sensor end and be sure the cable resistance is less than 5 ohms. If either condition fails, replace the cable.**
	3. Defective sensor or controller	• **Measure the refrigerant pressure at the sensor with a known-accurate instrument.** • **Measure the DC voltage between AI11 and GND on CN13.** • **Compare the voltage and the refrigerant pressure using the chart at left. If the voltage agrees with the refrigerant pressure, replace controller board. If the voltage and refrigerant pressure do not agree, replace the sensor.**



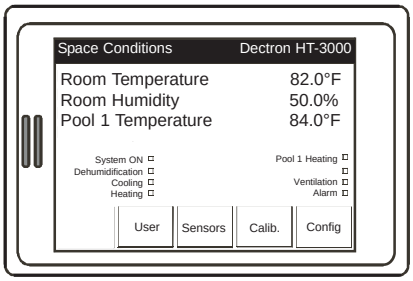
SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Return Humidity **Return humidity sensor fault**	1. Sensor cable disconnected.	• **Be sure the sensor cable is properly connected to both the sensor and the controller.**
	2. High load.	• Room RH over 90% may cause an erroneous sensor fault due to sensor calibration variations at the extreme of the scale. • **Temporarily re-calibrate sensor to read less than 100%. This will allow unit to run until load is reduced. See configuration and calibration page of owners manual for humidity sensor calibration. (Hc register)**
	3. Sensor wires broken or shorted	• **Disconnect the cable from the sensor and the from the controller and be sure the resistance of the cable is above 1 million ohms. Connect the ends of the cable wires together at the sensor end and be sure the cable resistance is less than 5 ohms. If either condition fails, replace the cable.**
	4. Defective sensor or controller	• **Measure the relative humidity at the sensor with a known-accurate instrument.** • **Measure the DC voltage between AI1 and GND on CN5.** • **Compare the voltage and the true humidity using the chart at left. If the voltage agrees with the true humidity, replace controller board. If the voltage and true humidity do not agree, proceed to next step.** • See **Sensor Calibration.**



SYMPTOM	POSSIBLE CAUSE	CHECKS & ACTION
Return Temp **Return temperature sensor fault**	1. Sensor cable disconnected.	• **Be sure the sensor cable is properly connected to both the sensor and the controller.**
	2. Sensor wires broken or shorted to ground	• **Disconnect the cable from the sensor and the from the controller and be sure the resistance of the cable is above 1 million ohms. Connect the ends of the cable wires together at the sensor end and be sure the cable resistance is less than 5 ohms. If either condition fails, replace the cable.**
	3. Defective sensor or controller	• **Measure the temperature at the sensor with a known accurate instrument.** • **Measure the DC voltage between AI2 and GND on CN5.** • **Compare the voltage and the true temperature using the chart below. If the voltage agrees with the true temperature, replace controller board. If the voltage and true temperature do not agree, proceed to next step.** • See **Sensor Calibration.**



Operation Sensor Calibration

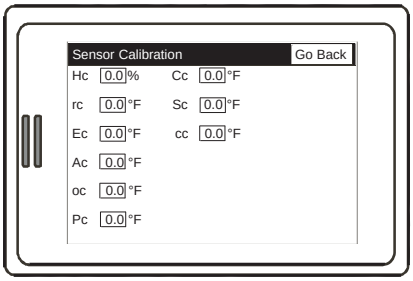


Sensors are subject to drift over time, and a replacement sensor is never exactly the same as the original sensor. Should a sensor be replaced or need recalibration follow these steps:

1. Locate the sensor.

2. Attach the sensor of a known-accurate instrument to the DRY-O-TRON® sensor.

3. After allowing the instrument enough time to settle, note the instrument reading.



4. Note the DRY-O-TRON sensor reading as shown in **Operation - Read Sensors**.

5. Touch Calib. . If prompted for a password, enter 17 and touch Accept .

6. Did you need to enter the password? Touch Calib. again. Otherwise proceed to step 7.

7. Using the chart below, select the calibration register for the sensor in question. **Be very careful not to change any other registers.**

Sensor Calibration	Register
Select one. — Humidity sensor	Hc
Return air temp. sensor	rc
Chilled air temp. sensor	Ec
Supply air temp. sensor	Ac
Outdoor temp. sensor	oc
Pool inlet water temp. sensor	Pc
Pool outlet water temp. sensor	Cc
Spa inlet water temp. sensor	Sc
Spa outlet water temp. sensor	cc
C1 high pressure transducer	Fc
C1 low pressure transducer	fc

Note that some options may not appear on your unit's screen.

8. Touch the number by the register to modify.

9. Enter the difference between the known-accurate instrument and the DRY-O-TRON® sensor. For example, if the return air temp. sensor reading is 1°F higher than the known-accurate instrument, enter -1.0 in the register to have the sensor reading match the known-accurate instrument.

10. Are there other sensors to check? If so, repeat steps 1 - 7 for each sensor.

11. Press Go Back to return to the main screen.

Note: The display will go back to the main screen after 2 minutes of no input.

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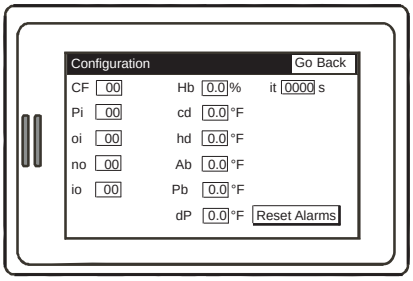
Appendix A Controller Configuration Register

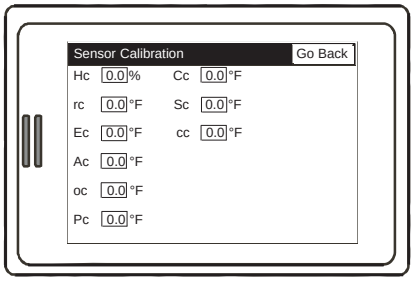
1. Press Config .
2. Enter the password, 17.
3. Press Accept . The screen will then show the main screen.
4. Press Config again. The screen will show the configuration screen.



NOTE: ( ) = range of setting; { } = recommended setting

Code	Meaning	Description
CF	scale and language	Select °F or °C, select English or French. See “CF” table on next page.
Pi	pools installed	Select pool and spa installed. See “Pi” table on next page.
oi	options installed	Select which options are installed. See “oi” table on next page.
no	new options (Rev. 12)	Set to **31** for units with WaterSmart feature. For all others set to **26**.
io	input/output options	Select optional alarm inputs.
cd	dead band	Dead band between cooling set point and heating set point **(**1.8 - 18.0 °F**)** or **(**0.5 -10.0 °C**) {**2F**} {**1C**}**
hd	heating differential	Differential between auxiliary heat stage #1 and stage #2 **(**0.4 - 9.0 °F**)** or **(**0.2 - 5.0 °C**) {**1 °F**}**
Ab	operating differential	Operating differential for air temperature control **(**0.4 - 4.0 °F**)** or **(**0.2 - 2.2 °C**) {**2 °F**}**
Pb	pools differential	Operating differential for pool and spa temperature control **(**0.4 - 4.0 °F**)** or **(**0.2 - 2.2 °C**) {**2 °F**}**
Hb	humidity differential	Operating differential for humidity control **(**1.0 - 9.9%**) {**5%**}**
dP	dew point control	Evap. temp. lower than this value will close the bypass damper to prevent coil freezing **(**37 - 55°F**)** or **(**2 -13 °C**). {**37 °F**}**
it	integral time	ON/OFF = 0 (heating), proportional = 60 (heating)

1. Press Calib. .
2. Enter the password, 17.
3. Press Accept . The screen will then show the main screen.
4. Press Calib. again. The screen will show the calibration screen.



NOTE: ( ) = range of setting; { } = recommended setting

Code	Meaning	Description
Hc	humidity calibration	Calibration of relative humidity sensor **(**± 10%**)**
Pc	pool inlet calibration	Entering pool water temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
Sc	spa inlet calibration	Entering Spa water temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
oc	outdoor calibration	Outdoor air temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
rc	return calibration	Return air temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
Ec	evaporator calibration	Chilled air temperature sensor calibration **(**± 9°F**)** or **(**± 5 °C**)**
Cc	pool outlet calibration	Leaving pool water temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
cc	spa outlet calibration	Leaving spa water temperature sensor calibration **(**± 9 °F**)** or **(**± 5 °C**)**
Ac	supply air calibration	Supply air temperature calibration **(**± 9 °F**)** or **(**± 5 °F**)**
Fc	high pressure calibration	C1 high pressure calibration **(**± 20 PSI**)**
fc	low pressure calibration	C1 low pressure calibration **(**± 20 PSI**)**

Data subject to change without notice.

Configuration Tables

"CF" Table (Display Type)

Display	Language	"CF"
°C	English	6
°F	English	7
°C	French	8
°F	French	9

"Pi" Table (Pools installed)

Spa have heating priority?	Spa installed?	Pool installed?	"Pi"
-	yes	yes	0
-	yes	-	1
-	-	yes	2
-	-	-	3
yes	yes	yes	4

Override Operating Mode

Δ Normal mode	+0
Δ Ignore evaporator and force pool heating for 20 minutes, if ambient above 60% r.h	+8
Δ Ignore evaporator and force pool heating for 30 minutes, if ambient above 60% r.h	+16
Δ Ignore evaporator and force pool heating for 45 minutes, if ambient above 60% r.h	+24

"oi" Table (Options installed)

A/C Option installed?	Outdoor sensor installed	"oi"
-	-	0
-	yes	1
yes	-	4
yes	yes	5
Δ Auxiliary Pool Water Heater		+48

Appendix A Controller Configuration Register

Configuration Tables, continued

"no" Table (new options)

Option	Description	"no"
HWC	Hot water coil present	+32
HSD	Humidity Sensor Alarm	+16
NHD	New Heating Differential	+8
WPS	Water pressure switch location	+4
MCRT	Minimum compressor run time	+2
BPSV	Bypass solenoid valve #5 &#6 (WaterSmart)	+1

NOTE: Minimum accepted value is 24.

"io" Table (new options)

Option	Description	"io"
PRES	Refrigerant pressure transducers enabled	+16
BLOW	Blower overload input enabled	+8
CLWTR	Cooling water pressure switch input enabled	+4
VOLT	Voltage monitor input enabled	+2
FIRE	Fire alarm input enabled	+1