



Electronics Make  
the Difference.®

# ACT, Inc. Commercial Controller D'MAND CIRC®

## DCKB

### Technical Training

Figure 1



## ***Electronics Make the Difference®***

Your ACT Inc. D'MAND CIRC® is programmable for your commercial plumbing application. The ACT Inc. D'MAND CIRC® System is commonly installed on return lines and can be adjusted to adapt to many applications on the line which services hot water supply lines from 1- 3" in diameter.

First we need to familiarize ourselves with the controls on the circuit board.

### LED Displays:

- Green** LED: Pump Running
- Blue** LED: Water Hot
- Red** LED: Power On
- Yellow** LED: Flow/Sensor

Figure 2



### LED Indicators:

- Green** LED: **Pump running**, this allows you to monitor the pump in loud environments.
- Blue** LED: **Water Hot**, Water is above the maximum setting on switches 4-6. (Above 95-110°F)
- Red** LED: **Power on**, power to control box.
- Yellow** LED: **SW**, Indicates sensor error. If sensor is not connected, or sensor cannot pick up water temperature then the yellow light will blink indicating the System is in a default mode on time intervals only.

Figure 3

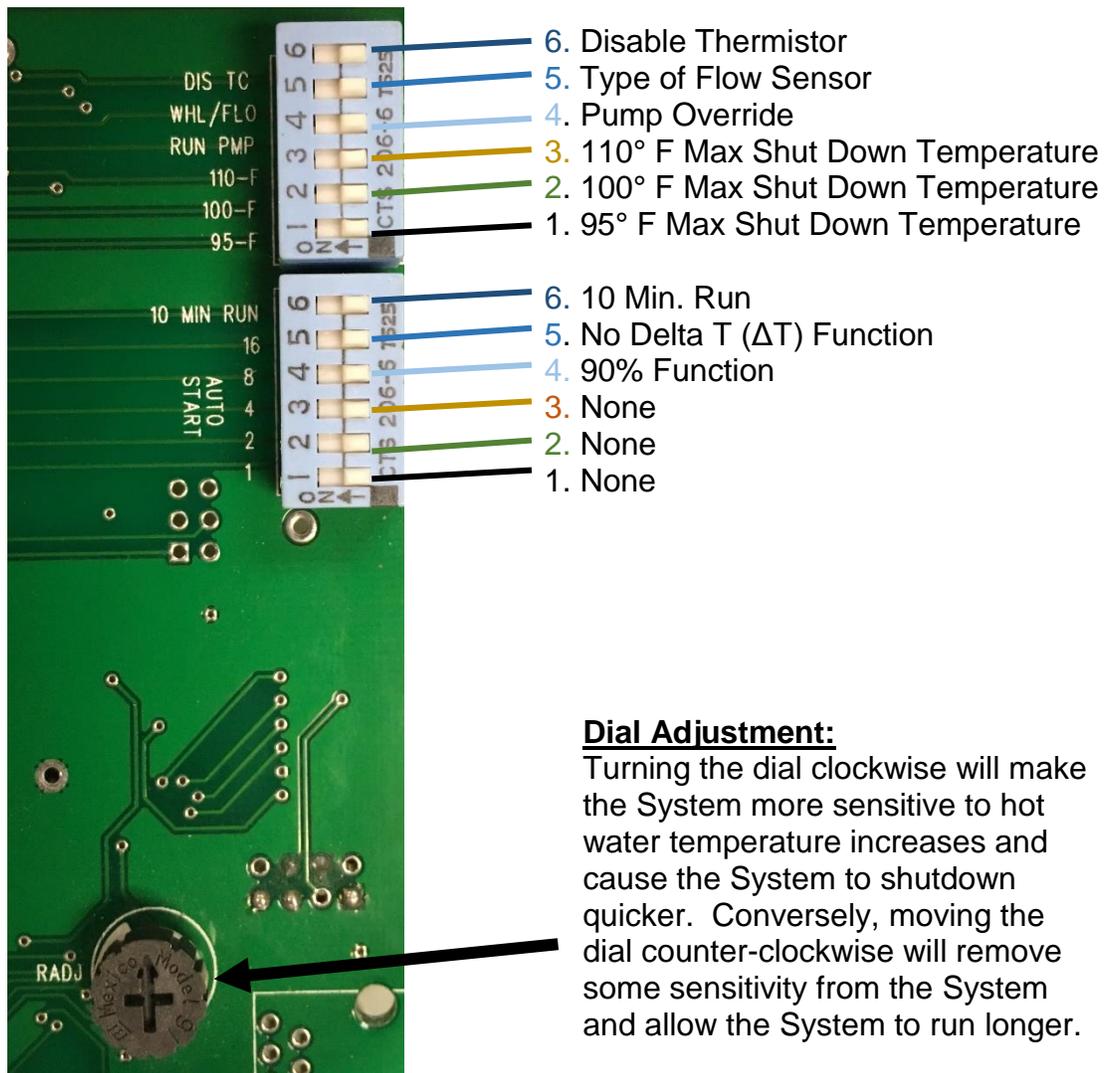
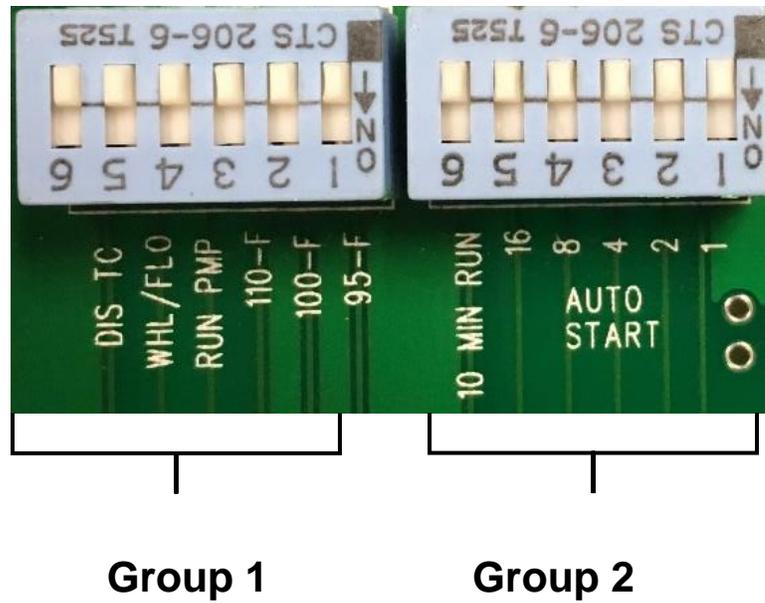


Figure 4



### Upper Switch Terminal Block (Group 1)

6. The **Disable Thermistor** setting allows the user to run the pump to the designated time out without the pump's thermistor turning it off.
5. The **Type of Flow Sensor** is used for an optional flow sensor type of activation.
4. The **Pump Run** allows the installer to turn the unit on despite conditions.
3. The **110°F Shut Down Temperature** switch allows for a turn off of 110° F and will not allow the pump to run past this setting.
2. The **100°F Shut Down Temperature** switch allows for a turn off of 100° F and will not allow the pump to run past this setting.
1. The **95°F Shut Down Temperature** switch allows for a turn off of 95° F and will not allow the pump to run past this setting.

### Lower Switch Terminal Block (Group 2)

6. The **10 minute run after start from 4 minutes** will allow the unit to run a maximum of 10 minutes instead of the standard lock out of 4 minutes.
5. The **16** switch allows the unit to turn off at set degree, disabling the Delta T ( $\Delta T$ ) setting.
4. The **8** switch will allow the unit to run for 90% of its max time.
3. Function is not available yet.
2. Function is not available yet.
1. Function is not available yet.

## Dial Adjustment:

- Dial rotates ¼ turn clockwise or counter-clockwise. This adjustment is used to adjust the pump's sensitivity or Delta T ( $\Delta T$ ) setting.
  - Turning the dial clockwise will make the System more sensitive to hot water temperature increases, and cause the System to shutdown quicker.
  - Conversely, moving the dial counter-clockwise will remove some sensitivity from the System and allow the System to run longer.
- (\*\*Note: Typically this is used to overcome “hot spots” in the plumbing line, or long runs of uninsulated piping which may cool down prematurely.)

Below (Figure 5), would be the recommended settings for initial set up.



Figure 5

For more savings and a more “aggressive” setting we can move the “100-F” switch to the up/off position for shorter pump run times (See Figure 6).

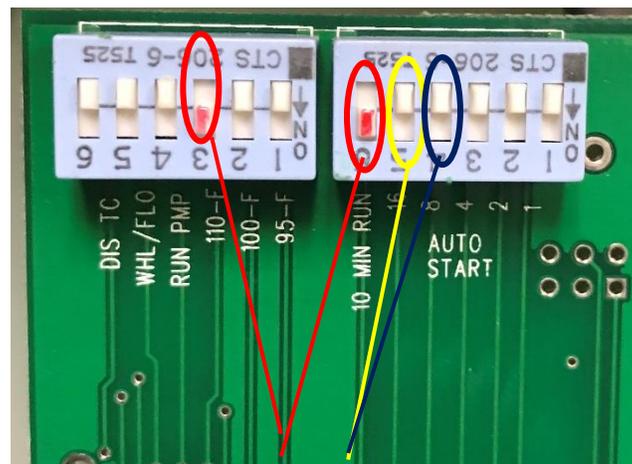


Figure 6

Only the 110-F and 10 MIN RUN in the “ON” position.  
No DeltaT ( $\Delta T$ ) switch  
90% Run time switch

**Note:** Once wired, all power will need to be shut down and reinitialized to reset the values on the controller.

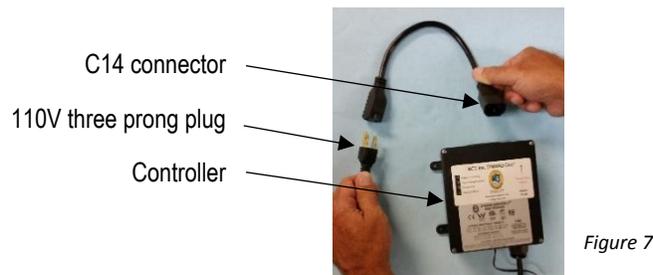
\*\*This also applies to changes made on the controller/switches (i.e. for indicator LEDs to show proper readings).

## **Physical Installation:**

The ACT Inc. D'MAND CIRC® System is installed by placing the controller with the LED light facing outward, using the eyelets to affix to a flat surface. This must be in a room/enclosure that will NOT allow moisture on the controller or the electrical connections. The controller must be installed within 6' of an electrical outlet for power, and within the pump's cord length to plug in to the receptacle. If an ACT Inc. D'MAND CIRC® pump is NOT used, then a plug adapter or a new power cord may be required to install the System.

A pump with a standard 110V electrical connector can be attached to the DCKB controller using the pigtail adapter.

First you will connect the C14 connector in to the top of the DCKB controller. The 110V three (3) prong plug will also connect in to the pigtail. (See Figure 7 & 8)



Here the system is connected correctly.



The controller must also be close enough to the return line piping to allow the temperature sensor to be affixed to the outside of the return line. The sensor must be installed so as the copper tip is firmly against a portion of smooth, clean piping (see figure 9).

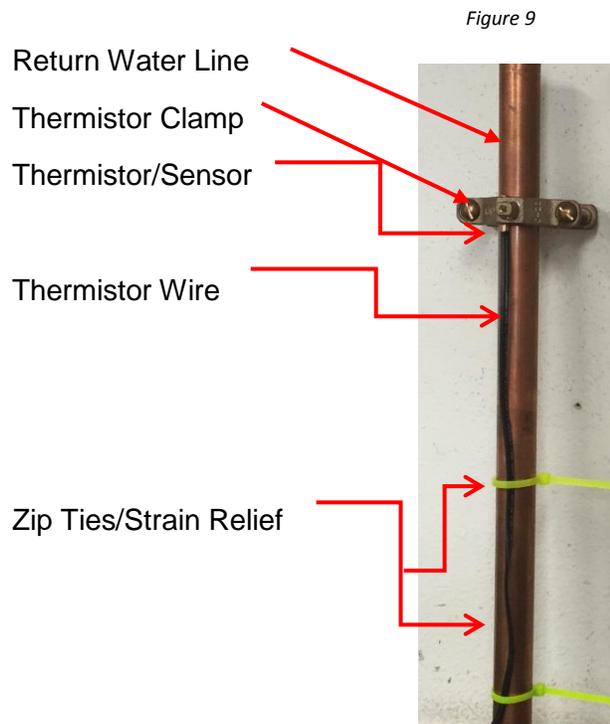
## Placement/Installation of Temperature Sensor on Return Line

The sensor needs to be placed on the plumbing return line at a position before entering the pump and preferably before any check valves on the return line. Additionally, the sensor placement should be away from any external heat source (i.e. boiler, heat exhaust, hot outgoing pipe, direct sunlight etc.). In an optimum installation the sensor would be placed in a position that closely mimics the return line's median temperature.

### Physical Install (See Figure 9)

To install the thermistor wire we will need to locate a clean smooth piece of piping (do not install on a fitting, tee or elbow). The copper sensor is simply laid flat on the piping with the provided clamp holding it firmly in place. DO NOT OVER TIGHTEN clamp as this could harm the enclosed sensor. Once secure we recommend using the supplied zip ties to affix the wire to the pipe for strain relief.

**(Note: Cannot be installed on fittings, it will not accurately read temperature.)**



## Adjustments/Troubleshooting

<u>Problem</u>	<u>Remedy</u>
System shutting down pump too soon.	<b>Action:</b> To increase the temperature shut off value turn on the “100-F” switch, (pull down if installed vertically) in addition to the “110-F” switch, as shown on (Page 5, Figure 5).
System needs to shut off at a specific temperature	<b>Action:</b> Pull down Switch: (Group 2; Switch 5) to the ON position (Page 4, Figure 4). This will disable the DeltaT ( $\Delta T$ ) function and allow the System to ONLY shut off at a fixed temperature. The temperature can be adjusted by turning the round black potentiometer counter-clockwise for hotter temperatures, and clockwise for lower temperature shut off.
System shutting off with spikes in hot water, a fixed run time is desired regardless of water temperature.	<b>Action:</b> Pull down Switch: (Group 2; Switch 4) for 90% run activation (Page 4, Figure 4). This switch disables ALL other functions and allows the controller to run for 15 min continuously and off or 1:30 min (times are approximate and may vary). This adjustment will give the System a fixed 10% reduced run time. This adjustment should only be used in extreme environments.

**Note: Power MUST BE CYCLED to the DCKB controller for changes to the take effect. If power is not cycled the adjustments will not change the controller.**

This can be achieved by a switch, a breaker to the electrical circuit the controller is connected to, or by disconnecting the wiring on the incoming power.



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## WARRANTY

### ACT Inc. D'MAND KONTROLS® Systems

ACT, Inc. will replace without charge (at the Company's option) any ACT Inc., D'MAND Kontrols® pump, valve, or component part which is proven defective under normal use. Models DCKB, DCKB-AP, DCKB-AP-CR: Warranty – (Five Years from date of purchase) Accessories: External Sensor(s) Warranty – (One Year from date of purchase.) Labor is not included with Limited Warranty.

In order to obtain services under this warranty, it is the responsibility of the purchaser to promptly notify the Company in writing and promptly deliver the item in question, delivery prepaid to the factory. The address for notification and delivery is ACT, Inc. D'MAND Kontrols® Systems, 3176 Pullman Street, Suite 119, Costa Mesa CA 92626. If the product or part in question contains no defects as covered in the warranty, the purchaser will be notified and billed for parts and labor charges in effect at the time of factory examination and repair.

Any product or part not installed or operated in conformity with instructions or which has been subject to misuse, misapplication, the addition of petroleum based fluids or certain chemical additives to the System, or other abuse, will not be covered by this warranty.

ACT, Inc. D'MAND KONTROLS® Systems OFFERS THIS WARRANTY IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE PARAGRAPH ENTITLED "LIMITED WARRANTY" AS SHOWN ABOVE.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR STATUTORY, OR ANY OTHER WARRANTY OBLIGATION ON THE PART OF ACT, INC. D'MAND KONTROLS® SYSTEMS.

ACT, INC. D'MAND KONTROLS® SYSTEMS WILL NOT BE LIABLE FOR ANY SPECIAL INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS OR ANY INCIDENTAL COSTS OF REMOVING OR REPLACING DEFECTIVE PRODUCTS.

This warranty gives you specific rights, and you may have other rights, which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, so those limitations or exclusions may not apply to you.

For any ACT, Inc. D'MAND CIRC® questions please call us at (800) 200-1956, or (714) 668-1200, or email us at: [info@GotHotWater.com](mailto:info@GotHotWater.com)

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