



Electronics Make
the Difference.®

ACT, Inc. Commercial Controller D'MAND CIRC®

DCKB-AP-CR (Single Phase)

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 a return line and can be adjusted to adapt to many applications on the line which services hot water supply lines from ¾" - 4" in diameter.

Warning: Can ONLY be used with pumps approved by Uniform Plumbing Code (UPC) Standards with pumps up to 2HP and 25Amps.

Note: To allow the controller to operate, be sure the override switch is in the “Up” or “Normal” position.

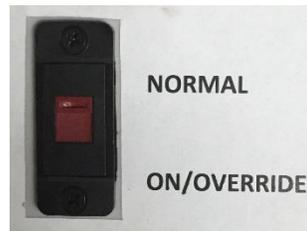


Figure 2

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

LED Displays

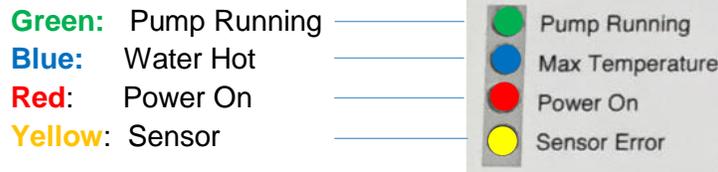


Figure 3

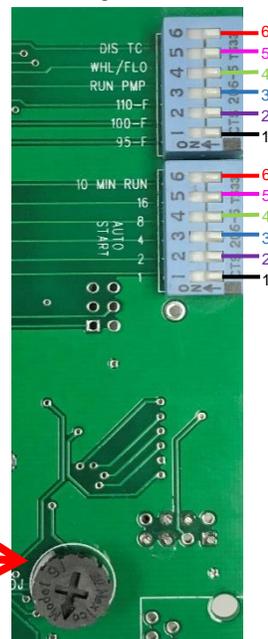
LED Indicators

- Green:** **Pump running** -- Allows you to monitor the pump in loud environments.
- Blue:** **Water Hot** -- Water is above the shut down temperature on switches 1, 2, and 3. (Above 95-110°F)
- Red:** **Power On** -- Power to control box.
- Yellow:** **Sensor Error** – Flashes when you depress the manual start button inside the box, or turn on the Override switch.

- 6. Disable Thermistor
- 5. Type of Flow Sensor
- 4. Turn On Pump
- 3. 110° F Shut Down Max Temperature
- 2. 100° F Shut Down Max Temperature
- 1. 95° F Shut Down Max Temperature

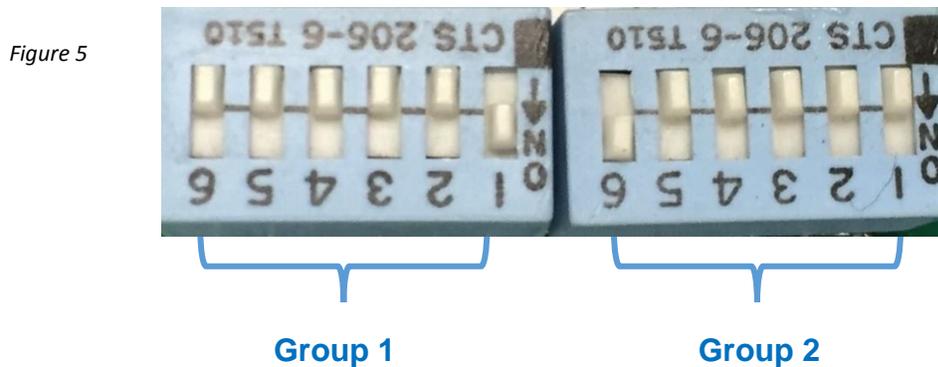
- 6. 10 min. run after start from 4 min.
- 5. 16 (No ΔT)
- 4. 8 (90%)
- 3. 4 hour
- 2. 2 hour
- 1. 1 hour

Figure 4



Dial adjustment
Adjust sensitivity of OFF sensor

In reference to *Figure 5* the **DOWN** position of each white switch is the “ON”.
The **UP** position will turn each white switch “OFF”.



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** can be used for an optional flow sensor type of activation (not currently available).
4. The **Turn ON Pump** 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** allows the unit to run a maximum of 10 minutes instead of the standard run time of 4 minutes.
5. The **16** switch enables/disables the **Delta T (ΔT)** function of the controller.
4. The **8** switch sets controller to operate on a **90% setting** (i.e. 13 min. off, 1 min, and 30 seconds on).
3. The **4** switch sets the pump for manual intervals of 4 hours between start times.
2. The **2** switch sets the pump for manual intervals of 2 hours between start times.
1. The **1** switch has no function.

Dial Adjustment

- The dial rotates ¼ turn clockwise or counter-clockwise. This adjustment is used to adjust the pump's sensitivity or Delta T (ΔT) setting.
- Turning the dial clockwise will make the System more sensitive to hot water temperature increases, and will 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.*

Factory Default Settings

All units sold will have the following settings pre-programmed:

1. “Run till hot” start up.
2. 10 minute run time.
3. ***110°F shut down temperature setting (see Figure 6).
4. Dial setting in center position. This will allow us to move the System to change the run time to shorter or longer between cycles.

Maximum Temperature Override

Your ACT, Inc. D'MAND CIRC[®] controller can be set to 120°F by combining the 110°F and 100°F shut down temperature switches (see below). In applications that require higher shut off, an additional option is to set the unit above the 110°F.

Switching ON the 110°F + 100°F
Will give a shut down temperature of 120°F

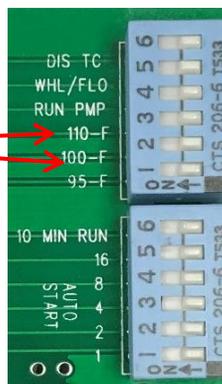


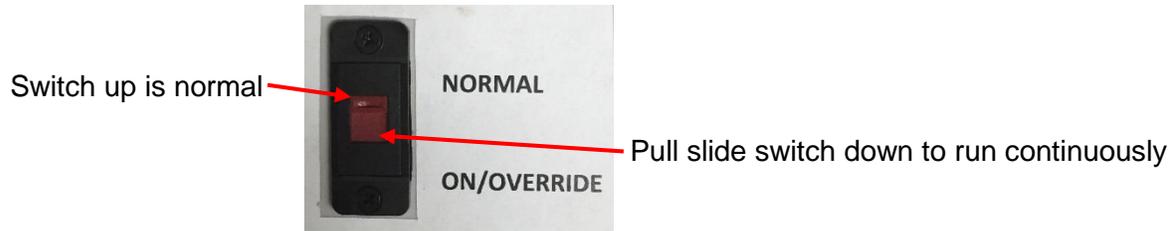
Figure 6

These settings are to ensure the ACT, Inc. D'MAND CIRC[®] System will universally satisfy the needs of the end user. Enhanced adjustments can be made by the installer/user to increase the efficiency of the System.

Important: *Power must be cycled for setting changes to take effect!*

DCKB-AP-CR Operating Instructions

Figure 7



Your ACT Inc., D'MAND CIRC[®] controller box should be mounted a minimum of 18" above floor level and have unobstructed access to the unit free of debris, or durable hazards which could damage the weather box and expose wiring.

There is no maintenance or monitoring required for the D'MAND CIRC[®] controller it just needs consistent continuous regulated power. As a safeguard the System does incorporate an inline fuse (below) to safeguard the electronics in the case of a large spike in the incoming power supply. If the fuse has been broken it can be replaced with a 20A slow blow common glass fuse.



Figure 8

What do the LED lights mean?

Figure 9



Blue on/solid: Shut Down Temperature

1. Temperature sensor has reached shut down limit
2. Thermistor is NOT connected to controller (I.e. severed wire or sensor)

Blue flashing: Shut Down Temperature

1. Water is within 9% of shut down limit
 - a. Will turn solid when meets limit

Green on/solid: Pump Running

1. Output power to pump

Yellow flashing: Sensor Error

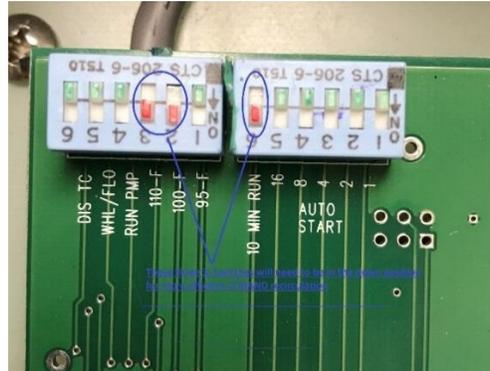
1. When you depress the manual start button inside the box
2. Turn on the Override switch

Red on/solid: Power On

1. Power to controller

Below (Figure 10), would be the recommended settings for initial set up.

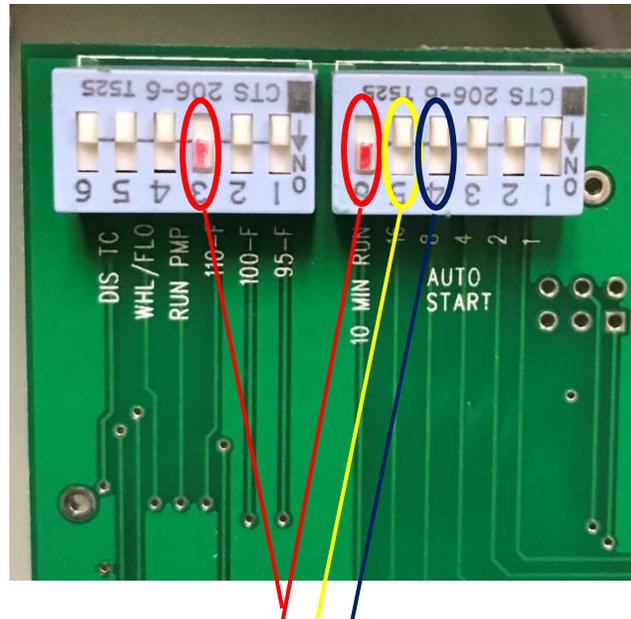
Figure 10



Note: These three (3) switches will need to be in the down position for more efficient D'MAND recirculation.

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 11 below).

Figure 11



Only the 110-F and 10 MIN RUN in the “ON” position.
No DeltaT (ΔT) 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).*

Adjustments/Troubleshooting

<u>Problem</u>	<u>Remedy</u>
System shutting down pump too soon.	Action: 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, (Page 7, Figure 10).
System needs to shut off at a specific temperature.	Action: Pull down Switch (Group 2; Switch 5) to the ON position (Page 7, Figure 11). This will disable the DeltaT (ΔT) Function and allow the System to ONLY shut off at a fixed temperature. The temperature can be adjusted by turning the round black potentiometer (Page 2, Figure 4). 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.	Action: Pull down Switch (Group 2; Switch 4) for 90% run activation (Page 7, Figure 11). 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-AP-CR 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 disconnecting the wiring on the incoming power.



Electronics Make
the Difference.®

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

Please refer to our website at www.gothotwater.com for warranty and indemnification information .

Edited 9/24/2018