Smart Countdown Control 32
Installation Guide

QUICKSTART GUIDE SEE PAGE 2

Congratulations on purchasing the most advanced micro processor controlled, hot water recirculation pump controller made. This system is designed to run the recirculation pump only when you need it thus saving both water and energy. It is designed and built with pride in the USA to provide years of service and savings.

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Needed: The following items are needed for the installation, but are not included.
PTFE (Teflon) Tape
Wire fasteners for securing wiring to the wall

QUICKSTART GUIDE

Prior to installation perform the following system test.

1. Connect the wiring harness to the controller.

2. Connect the flow meter to the wiring harness.

3. Plug the controller into a wall outlet and ensure that the LED on the controller flashes green 3 times.

4. Blow through the flow meter in the direction of the arrow and ensure the controller makes a slight audible click and the red LED turns on. It will stay on for approximately 5 minutes but you don't need to wait for it to turn off. The test was to ensure that the flow meter can turn on the controller.

If this test fails, disconnect the flow meter from the wiring harness and the wiring harness from the controller. Inspect the wires to ensure they are not broken or loose and that the pins are not bent. Reconnect all connections ensuring they snap together tightly and re-test. If this test still fails, contact customer support at support@smartrecirculationcontrol.com or 831-761-8659.

1. Install the flow meter at the cold water input to the water heater ensuring the arrow on the flow meter points in the direction of flow. NOTE: PTFE tape is necessary when joining to a female NPT connector. PTFE tape is NOT necessary when connecting to a flexible hook up line as they have a washer that creates the seal.

2. Connect the flow meter to the wiring harness and plug the wiring harness into the controller.

3. Plug the controller into an outlet and plug the pump into the controller.

4. Turn a hot water faucet fully on for 1 second and the pump should turn on and run for approximately 5 minutes.

If the pump fails to turn on see Trouble Shooting on page 7, item 1.

LED Legend:
GREEN LED: will blink 3 times when first plugged in to indicate the unit is functioning correctly
GREEN LED: solid on when a timer is active and pump is not running
RED LED: solid on when the pump is running whether due to a timer or due to demand
BLUE LED: solid on when connected via the smart phone app
NO LED: normal behavior after initial boot up – no timer is active and pump is not running

DETAILED INSTRUCTIONS

Please read over the following instructions. If you are not comfortable with any part of them please contact a licensed plumber to perform the installation.

Prior to installation you must perform the system test at the beginning of the Quickstart Guide on page 2.

Installation:
1. Note setting of water heater thermostat and then set to lowest temperature setting (do not turn off the pilot light).
2. Shut off the cold water supply to the water heater.
3. Open the closest hot water faucet to the water heater to depressurize the hot water line. When water quits flowing, turn off the faucet.

4. Disconnect the cold water supply line from water heater. Be careful not to bend and crease the supply line when manipulating it. Be prepared with some towels as some water will flow out of the hookup line. You don't have to drain the tank. As long as all the faucets remain closed you should not get any back flow from the hot water line.
5. Connect the flow meter to the cold water input of the water heater using PTFE tape being sure that the arrow on the flow meter is pointing toward the water heater.
6. Connect the cold water supply line to the input side of the flow meter. The supply line uses a washer to seal so you don't need use PTFE tape on this connection. Hand tighten and turn an additional ¼ to ½ turn. DO NOT OVER TIGHTEN!
7. Turn on the cold water supply to the water heater and inspect for any leaks.
8. Turn water heater thermostat back to its original temperature setting.

9. Connect the flow meter to the wiring harness via the JST connector ensuring it snaps together securely.
10. Secure the wires to the wall away from the water heater.
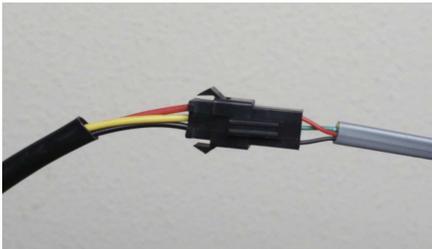
11. Plug the wiring harness into the Smart Countdown Control 32 via the RJ-45 connector ensuring it snaps in securely.

12. Plug the recirculation pump into the Smart Countdown Control 32 and plug the Smart Countdown Control 32 into an electrical outlet.
13. The green LED on the side of the controller will blink 3 times if everything is OK.
14. Turn a hot water faucet fully on for 1 second. This will trigger the recirculation pump to turn the pump on and run for the duration of the countdown time (default 5 minutes). The red LED turns on while the pump is running.
15. Once the time is up, the pump will turn off and won't turn on again until the dormant interval has expired (default 10 minutes).
16. If the pump fails to turn on when a faucet is fully opened for 1 second, see Trouble Shooting page 7.

Smart Countdown Control 32 Setup with Smart Phone

The Smart Countdown Control 32 can be used simply as an on demand controller for your recirculation pump or, once configured using either an iPhone or Android smart device, it will also work as an advanced timer keeping the hot water line hot between specific times of day and on specific days of the week (up to 10 timers can be set). Even when a timer is active it only runs the pump for the countdown time amount and then goes to sleep for the dormant interval. The app uses Bluetooth in order to communicate with the controller so you need to be sure that Bluetooth is enabled on your smart device. The app can be downloaded for free from either the Apple App Store or from Google Play by looking up "Smart Recirculation Control".

There is no need to "pair" the Bluetooth device, running the app will find and connect to the Smart Countdown Control 32 and display the timers currently set. The blue LED on the controller will illuminate when the app is connected. If the blue LED doesn't illuminate, press the menu button in the top right of the app and select "Scan for Recirc Control". **Note:** We have noticed that some Android devices can sometimes have a hard time connecting so if it fails to connect after pressing the "Scan for Recirc Control" menu item a couple of times, try restarting the app.

Once connected you can tap any of the existing timers to edit or delete them or press the Add Timer button to add a new one.

The real time clock in the Smart Countdown Control 32 is set when you connect to the controller with your smart phone. When a timer is active the green LED will be lit. When the Smart Countdown Control 32 turns the pump on, the LED will change from green to red. When the loop is up to temperature the pump will shut off and the LED will change back from red to green.

When connected to the controller via the smart phone app, the blue LED will always be lit. To know if the pump is running or a timer is active, select "Live Flow"$_{TM}$ from the menu and it will provide the status of the pump and timers.

The Smart Countdown Control 32 has a built in power backup that will keep the clock's time for approximately 48 hours after which the clock will lose its time and the controller's timers won't function until the time is set by running the app and connecting to the Smart Countdown Control 32.

The clock does not adjust for daylight savings time so when the time changes you will need to connect to the Smart Countdown Control 32 with your smart device and the time will be set to the time of your smart device.

Smart Countdown Control 32 Settings:

The app also allows for controlling all the settings of the firmware of the Smart Countdown Control 32. To access the settings press the menu button in the top right of the app and select "Settings". There will be a list of basic settings and the ability to expand the settings to "Show Advanced Settings".

Basic Settings:
Sensitivity – The sensitivity setting allows the user to set how many pulses of the flow meter are required to turn the controller on. The default value is 20 which is fine for most installations. If you find that the controller is not turning on when you turn a faucet on and off, you would decrease this value to make the controller more sensitive to flow (require fewer pulses to turn the controller on). Correspondingly, if you find that the controller is turning on when there is no timer active and no hot water being drawn, you would increase this number to make the unit less sensitive to fluctuations in flow (require more pulses to turn the controller on).

Run Time – This setting allows you to set the amount of time the controller will run the pump when it is triggered. It is configurable up to 15 minutes with the default being 5 minutes.

Timers Enabled – This switch enables and disables the timers. This can be used to turn the timers off when you go away on vacation or to simply turn them off if you just want to use the on demand feature of the controller. The Smart Thermostatic Control 32 implements "Smart Timers"$_{TM}$ which, regardless of this setting, will automatically disable themselves if no hot water usage is detected within 24 hours. The timers are re-enabled as soon as hot water flow is detected.

Advanced Settings:
Dormant Interval – The dormant interval is the number of minutes that the controller lies dormant after having run the pump. This setting prevents fast cycling of the pump when hot water is being turned on and off over a short period of time. This is also the number of minutes that the controller waits between runs when a timer is active. If you want the pump to turn on more often while a timer is active or more quickly between pump runs when you draw hot water you would reduce this value. This value is set to a default of 10 minutes.

Flow Meter Delay – The flow meter delay is the amount of time in hundredths of a second during which time the controller counts the number of pulses that occur in the flow meter. If the number of pulses is above the sensitivity threshold then the controller deems that there is flow in the hot water line. This value is set to 75 hundredths of a second which is fine for most installations.

Reset to Factory – This will reset the Smart Countdown Control 32 back to the factory defaults. If you experience strange behavior of the controller, resetting to the factory defaults would be a good thing to try to resolve the issue. This will also reset all the timers back to the 4 factory default timers so if you have changed the timers you will need to reset them after performing a factory reset. You must type "yes" when prompted in order for the factory reset to take place.

Firmware
The firmware of the Smart Countdown Control 32 can be updated via the smart phone app. To check if there is new firmware available go to the menu and select Firmware. If there is new firmware available it will be displayed and the selection will be enabled. Select the firmware and click the "Update Firmware" button. The update can take up to 5 minutes to complete. Do not allow the application to go to the background or the phone to sleep while the firmware update is running or the update will fail. The system is designed to only switch to the new firmware if the update is successful so if this does happen simply attempt the firmware update again.

There is an option on this screen to "Show All Firmware Version" which will display the firmware from our

entire product line. The sensor requirements for the different firmware versions are different so updating to a different product without understanding the implications may provide unexpected results. Please see our web site for a description of the different products.

Trouble Shooting

1. SYMPTOM: Pump won't turn on when hot water is drawn from a faucet.

    ISSUE 1: If the controller has run within the dormant interval, the pump won't automatically turn on when flow is detected.

    RESOLUTION 1: Unplug the controller from power for 10 seconds and plug it back in. This will reset the controller and it will now turn on automatically when it detects flow. Turn a hot water faucet fully on for 1 second and then turn it off. If it still doesn't turn on see ISSUE 2.

    ISSUE 2: The sensitivity value is set too high for the controller to detect the flow provided by your faucet.

    RESOLUTION 2: Open the smart phone app and go to the menu and select "Live Flow". This will show you what the controller is sensing. Turn a hot water faucet fully on and watch the flow value. If it goes greater than 20 then the pump will turn on. If it doesn't go greater than 20 then you will need to reduce the sensitivity value to be less than the maximum value you observed. For example, if the Flow Meter value went to 15, then set your sensitivity value to 13 and try this test again.

2. SYMPTOM: Pump turns on when no hot water is being drawn.

    ISSUE: Pressure spikes in the cold water supply line caused by abrupt turning off of the cold water (for instance when a toilet fills) or caused by fluctuations in the feed from the utility company can cause the Smart Countdown Control 32 to trigger the hot water recirculation pump to turn on.

    RESOLUTION: The sensitivity value of the Smart Countdown Control 32 is too low and should be adjusted higher.

If you need further support please contact:

Leridian Dynamics, Inc.
support@smartrecirculationcontrol.com
or 831-761-8659