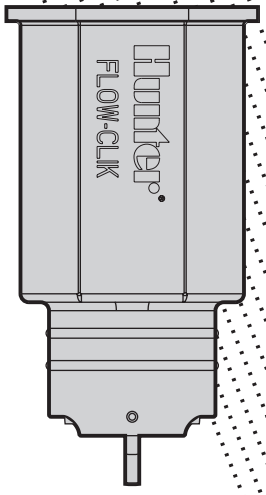
# FLOW-CLIK-IMMS

## Flow Sensor

**Owner's Manual and**
**Installation Instructions**

***Version for use with Hunter Irrigation Management and Monitoring System (IMMS™)***




Hunter®

# TABLE OF CONTENTS

# INTRODUCTION

Shutting down an irrigation system when excess flow occurs provides the benefits of reduced liability, water conservation, erosion prevention and overall reduction in repair costs. Typical causes for overflow conditions can stem from problems due to ruptures in the main or lateral lines, when heads are broken or removed from the system, or when valves do not shut off automatically.

The Hunter Flow-Clik flow sensor monitors flow to an entire irrigation system or through an individual valve. In the case of an overflow condition, the Flow-Clik will automatically shut down the irrigation system at the controller. The Flow-Clik acts as a switch to break the electrical circuit to the solenoid valves as soon as it registers a flow exceeding a calibrated set limit. This allows the timer to advance as scheduled, but keeps the valve(s) with a “high flow” condition from activating. As a result of installing the flow sensor in a system, the user gains the benefit of substantially reducing the amount of water loss during an occurrence of an overflow condition.

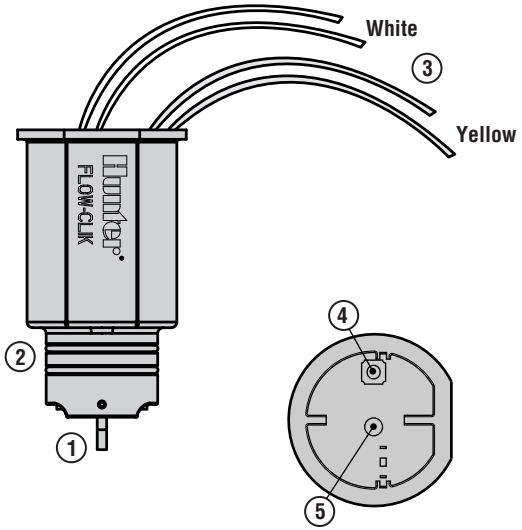
The Flow-Clik version for Hunter IMMS™ applications works in conjunction with IMMS software to provide the user with an alarm on the central computer screen informing the irrigation manager that there is a problem with the system at the site. The Flow-Clik can be programmed to shut down the site, an individual controller on a site, or report the overflow problem without shutting down the irrigation system.

# FLOW-CLIK COMPONENTS

This section will give you a brief overview of some of the components of the Flow-Clik system. Each item will be discussed in further detail later; however, this section can be helpful in getting acquainted with the different options available.

## A. Flow-Clik Sensor

1. **Impeller** – rotates when flow is occurring
2. **O-rings** – provides sealing of sensor in sensor body
3. **Wires** – white wires connect to sensor terminals and yellow wires to 24 VAC terminals in IMMS interface
4. **Calibrate Button** – used to calibrate the sensor to the system. Also used to restart the system when using the "Restart Manually" setting for Interrupt Period.
5. **System Status Indicator** – LED light provides visual indication of Flow-Clik status.



## B. Flow-Clik Sensor Body (FCT Series)

1. **Flow-Clik Tee** – the Tee is installed into the irrigation system and houses the Flow-Clik sensor
2. **Plug** – used to seal the body when the sensor is not installed in the sensor body
3. **O-rings** – provides sealing of plug in sensor body
4. **Cap** – retains plug or sensor in sensor body
5. **Cover** – snaps over the top of the sensor

**NOTE: Flow-Clik sensor bodies ordered separately.**

## C. System Status Indicator

The Flow-Clik-IMMS has a System Status indicator LED that provides information on the current status of the system and is helpful when calibrating the Flow-Clik-IMMS to your system.

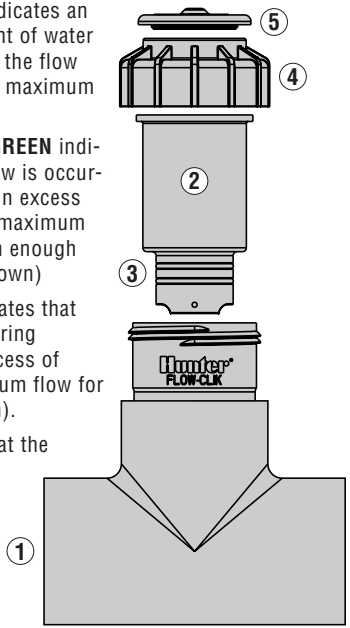
**GREEN** indicates power is applied to the sensor, but no flow is occurring

**FLASHING GREEN** indicates an acceptable amount of water is flowing (below the flow sensor calibrated maximum flow)

**ALTERNATING RED/GREEN** indicates that overflow is occurring (Water flow in excess of the calibrated maximum flow, but not high enough for system shutdown)

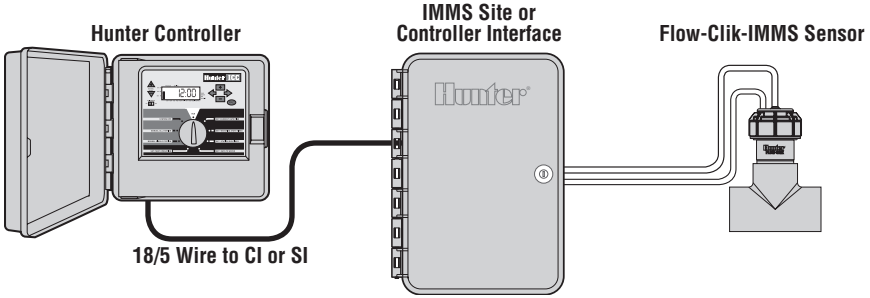
**FLASHING RED** indicates that overflow is occurring (water flow in excess of calibrated maximum flow for system shutdown).

**YELLOW** indicates that the Flow-Clik is calibrating the sensor to the system flow.



# SYSTEM OVERVIEW AND FLOW-CLIK OPERATION .....

The Flow-Clik-IMMS System can be installed simply and easily to the Hunter IMMS System. The Flow-Clik System consists of the Flow-Clik flow sensor that is installed in the main line or lateral line of an irrigation system. The flow sensor, wired directly to the IMMS Site or Controller Interface, continually monitors flow occurring within the system and transmits this data to the IMMS Site/Controller Interface. The Site/Controller Interface provides the power for the Flow-Clik sensor, allowing it to send signals continuously telling the Site/Controller Interface to shut down or start up based upon flow conditions.

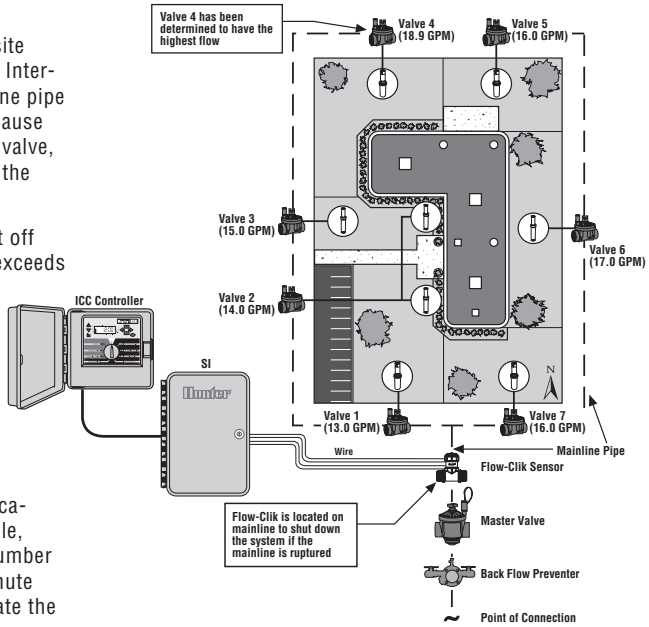


## Example of System Operation

This illustrative example shows a small commercial site using a single ICC controller with a single IMMS Site Interface. The Flow-Clik sensor is connected to the mainline pipe that provides water to the system control valves. Because it is installed immediately downstream of the master valve, it will provide the added protection of shutting down the irrigation system if a mainline break should occur.

The Flow-Clik-IMMS can be set to automatically shut off the system whenever actual flow within the system exceeds the flow of the system's highest flow zone. During installation of the sensor, a calibration procedure (see Calibrating the Flow-Clik) is used to set the Flow-Clik-IMMS at a level of flow dictated by the highest flow zone. If the system flow exceeds the "calibrated" flow by a pre-determined amount, the Flow-Clik-IMMS will signal to the IMMS Site Interface an overflow condition is occurring.

The figure to the right shows an example of an application using the Flow-Clik-IMMS sensor. In this example, the valve that commands the highest flow is valve number 4, which has a total flow rate of 18.9 gallons per minute (GPM). The user would turn this valve on and calibrate the



Flow-Clik-IMMS to this zone. If flow exceeds 18.9 gpm, a signal will be sent to the IMMS Site Interface which would communicate to the controller to interrupt the system for a prescribed period of time set by the IMMS central computer.

The system startup delay and interrupt period can be programmed in the IMMS central computer (see IMMS owner's manual). The system startup delay allows for system stabilization to occur prior to the Flow-Clik sensing for an overflow condition. The startup delay can be adjusted from 0 to 300 seconds.

The interrupt period setting allows the user to program the Flow-Clik-IMMS to shut the system off for a prescribed amount of time. The interrupt period can be adjusted to a specified setting from 5 to 60 minutes. There is also a Restart Manually option that shuts the system off until it is manually restarted at the flow sensor.

In the following example, the startup delay is set for 20 seconds and the interrupt period is set to 10 minutes.

### High-Flow Scenario 1 – Valve 3 Lateral Line Breaks

If a lateral line break should occur on valve number 3, the Flow-Clik would sense a "high flow" condition and would shut the system down after a sustained 20 second overflow condition an alarm is then sent to the IMMS central computer indicating that overflow occurred at the site. Once the system has been shut off, the Flow-Clik-IMMS will continue to keep the system off for the 10 minutes programmed into the interrupt period. After 10 minutes have passed, the Flow-Clik-IMMS will turn the system back on and begin to monitor for an overflow condition.

If the run time for zone 3 is 19 minutes and is scheduled to come on at 6:00 am, then the following chain of events would occur:

**6:00 AM** – Valve 3 is activated and the Flow-Clik senses an overflow condition. After a 20 second delay the system is shut off for 10 minutes.

**6:10 AM** – Valve 3 is reactivated (it still has 9 minutes of run time left) and after a 20 second delay, a "high flow" condition is again identified and the system is interrupted for another 10 minutes.

**6:18 AM** – Valve 4 is scheduled to be activated by the irrigation controller, however, the Flow-Clik continues to interrupt system operation due to the 1 minute left on the interrupt delay.

**6:20 AM** – Valve 4 is activated and the Flow-Clik begins to monitor the flow of valve 4 which is below the "high flow" trigger point enabling the controller to continue to irrigate as it normally would.

**Post 6:20 AM** – For the balance of the irrigation cycle flow is monitored by the Flow-Clik without exceeding the maximum and the total irrigation schedule is completed.

The Flow-Clik will continue to shut the system off during automatic operation of valve 3 until the lateral line break is repaired.

## High Flow Scenario 2 – Mainline Ruptures

If a mainline ruptures, the Flow-Clik would identify a "high flow" condition approximately 20 seconds after the first valve is activated based upon the irrigation schedule and the master valve would be shut down. Flow would continue to be monitored every 10 minutes and after a sustained 20 second "high flow" condition, the system would be shut off. This will occur until the mainline pipe is repaired.

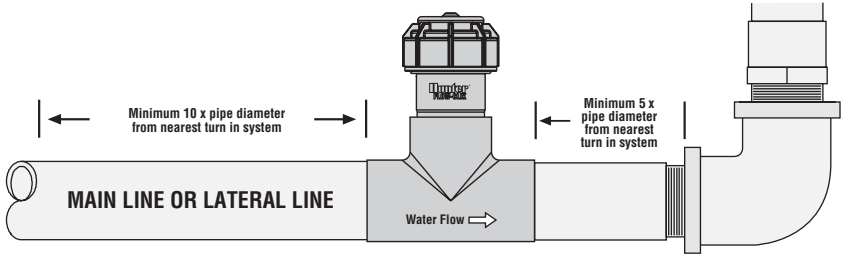
In both of the above scenarios, the "high flow" shut down capability of the Flow-Clik-IMMS sensor would eliminate the water waste and associated damage to the site that would be caused by the breaks in the irrigation system. In the lateral break scenario, the Flow-Clik-IMMS halts irrigation of the effected valve while continuing to allow the controller to irrigate the rest of the zones throughout the system.

# INSTALLING THE FLOW-CLIK SENSOR BODY

The Flow-Clik-IMMS sensor body is available in diameters from 1" to 3" (ordered separately). The body is installed into the mainline or lateral pipe of the irrigation system. It is important to install the Flow-Clik Sensor Body downstream of the master valve (for mainline installations) or the zone valve (for lateral line installations). Also, it is necessary to install the Sensor Body in an area of low turbulence within the system. Areas of high turbulence will cause erratic readings from the Flow-Clik-IMMS.

The figure below represents a recommended sensor body installation. There must be at least 10 times the pipe diameter of straight pipe upstream of the Sensor Body inlet and at least 5 times the pipe diameter in length of straight pipe downstream of the Sensor Body outlet. This will assure that the Flow-Clik sensor be placed in the optimum position within the irrigation system.

**NOTE: For maximum protection against overflow conditions, it is required that a master valve be installed.**



# INSTALLING THE FLOW-CLIK SENSOR INTO THE SENSOR BODY .....

The Flow-Clik Sensor Body comes with a plug that allows for installation of the Sensor Body into the irrigation system prior to installing the Sensor. This allows the sensor body to be installed separate of the sensor and prevents damage to the sensor during installation of the body.

**NOTE: Do not attempt to remove the sensor plug or sensor while the system is under pressure.**

**To install the sensor into the body:**

1. Turn the system pressure is off.
2. Unscrew the cap from the top of the body (figure 1).
3. Use pliers or a screwdriver and carefully pry the plug from the body.

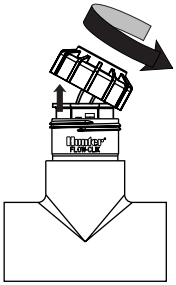


Figure 1

4. Insert the sensor into the sensor body (Check to make sure the two o-rings provided with the sensor are installed in the grooves at the lower end of the sensor). The sensor has a flat side that engages with a flat on the inside of the sensor body (figure 2).
5. Replace the cap on the sensor body (hand tighten only).
6. Feed the four sensor wires through the hole in the cover and snap the cover on the cap.

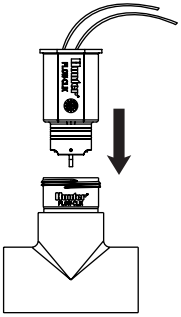


Figure 2

# WIRING THE FLOW-CLIK TO THE IMMS

**WARNING!** This unit is designed to be installed in conjunction with 24 VAC circuits only. Do not use with 110 or 220 VAC circuits.

Each IMMS Site and Controller Interfaces allows for installation of up to three sensors. The Flow-Clik-IMMS can be wired to any one of the three sensor terminals provided. Programming the sensors is done at the IMMS central computer.

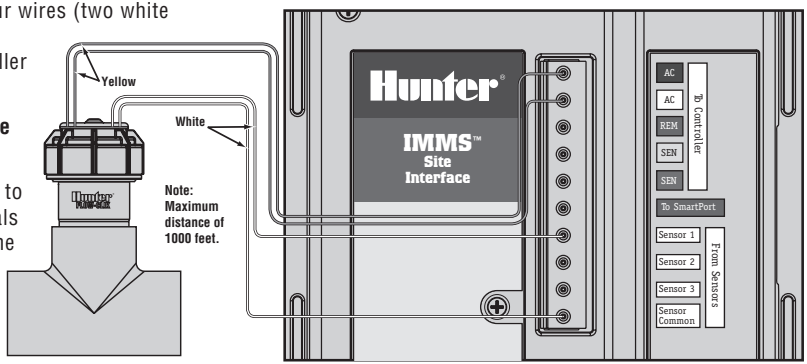
The Flow-Clik-IMMS sensor has four wires (two white and two yellow) that are connected directly to the IMMS Site or Controller Interface.

### Wiring the Sensor to the IMMS Site Interface

Connect one of the two white wires to any one of the three sensor terminals inside the Site Interface. Connect the other white wire to the sensor common terminal. The two yellow wires are connected to the two AC terminals.

A minimum wire size of 18-gauge wire can be used to connect the leads from the sensor to the Site Interface. Secure all wire connections with waterproof connectors.

**NOTE: The Flow-Clik Sensor can be installed up to a maximum of 1,000 ft. from the Site or Controller Interface when installed with #18 gauge or larger copper wire.**

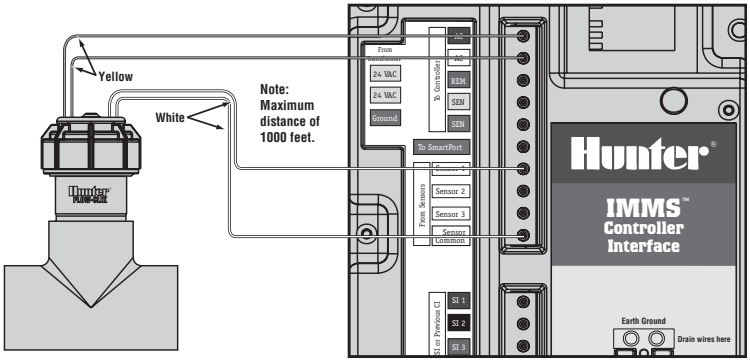



**Flow-Clik IMMS Sensor** **Site Interface**

**Wiring the Sensor to the IMMS Controller Interface**

Similar to the Site Interface Installation, connect one of the two white wires to one of the three sensor terminals. Connect the other white wire to the sensor common terminal. The two yellow wires are connected to the two AC terminals.

A minimum wire size of 18 gauge wire can be used to connect the leads from the sensor to the Controller Interface.




**Flow-Clik IMMS Sensor** **Controller Interface**

# SYSTEM CONSIDERATIONS

Proper irrigation system design and operation assures optimum performance of the Flow-Clik-IMMS in monitoring for potential high flow conditions. It is important to understand that the Flow-Clik-IMMS is primarily designed to shut off the irrigation system in the event of a catastrophic system failure such as a main line or lateral line break. However, depending upon the design of the irrigation system, the Flow-Clik-IMMS can offer increased protection when components such as sprays or rotors are damaged or removed due to vandalism. The following may be helpful in making your Flow-Clik System operate at its optimum level.

## Proper Irrigation System Design

Generally, the Flow-Clik-IMMS is designed to shut off the irrigation system when a high flow condition is identified. A high flow occurs when the actual flow rate through the system exceeds the "learned" flow of the highest flow zone. If a wide variation in flow rates exist between the highest flow zone and the lowest flow zone, the Flow-Clik-IMMS may not sense an overflow condition if damage occurs within the low flow zone(s). For example, if an irrigation system has a rotor zone that operates at 18.9 GPM, and a drip zone that flows at 5 GPM; any damage to the drip zone components may not result in high enough flow rate for the Flow-Clik to sense an overflow condition.

The more balanced the irrigation system is designed, the more protection will be provided by the Flow-Clik. Zones should be designed so that they operate at similar flow rates.

**NOTE: To assure proper operation, the flow for the highest flow zone should not exceed 75% of the maximum system flow.**

## Mainline Pressure Fluctuation

Some water sources may have varying pressure depending upon the demand for water upstream of the point of connection. During times of heavy demand, system pressure through the mainline may drop. A decrease in mainline pressure will result in a decrease in flow rates throughout the system. If the Flow-Clik calibration procedure takes place during a period of time which pressure is at its lowest point, an increase in pressure at the point of connection may result in system flow rates that exceed the calibrated "high flow". As a result, the Flow-Clik may shut the system down prematurely even though the system is functioning normally.

**NOTE: If pressure fluctuations at the point of connection in excess of 10 psi are expected, it is recommended that a pressure regulator be installed on the mainline or at the master valve.**

### Proper System Maintenance and Operation

It is important that your irrigation system be maintained and is functioning properly for optimum performance. Check your irrigation system for any broken components or leaks also, make sure that all sprinklers are operating within the pressure ranges recommended by the manufacturer.

## CALIBRATING THE FLOW-CLIK-IMMS TO THE SYSTEM .....

**NOTE: Before calibrating the Flow-Clik to your system, it is very important that the irrigation system be in good working condition. Irrigation system leaks, broken sprinklers, zones operating outside specified pressure ranges, will have a negative effect on the performance of the Flow-Clik-IMMS.**

The sensor is calibrated by holding the Calibrate button down on the top of the sensor for 5 seconds while the highest flow zone is operating. After a 5 second period of "learning" it will begin to monitor system flow and the System Status Indicator will turn flashing green.

When the calibrate button is pressed, the System Status Indicator light will turn yellow indicating that the sensor is "learning" the flow. When the light turns yellow, release the calibrate button.

**If you already know the highest flow zone within the system:**

1. Manually activate the zone with the highest flow.
2. While the zone is operating, press and hold the Calibrate button on the top of the Flow-Clik sensor. The System Status Indicator light will change to yellow during the calibration process. Once the Flow-Clik has finished "learning" the system's high flow zone, the light will turn to flashing green which means that the calibration process is complete and flow is occurring.

# CALIBRATING THE FLOW-CLIK-IMMS TO THE SYSTEM (continued)...

**If you do not know the highest flow zone within the system:**

## Flow Estimate Calibration Method

In some cases, you may not know the zone with the highest flow. A guideline that will help you easily determine which zone valve has the highest flow (GPM) is to count the number of sprinklers on each zone. If there are zones with both sprays and rotors operating in the irrigation system, you can multiply each spray head by 2.0 GPM, each medium range rotor by 4.0 GPM, and each large range rotor by 15.0 GPM for a general estimate of total flow for each zone.

For a more accurate determination of total flow for each zone, it is recommended that you measure the nozzle pressure at each sprinkler zone and then look up the nozzle flow at that specific pressure in the nozzle performance data section of the manufacturer product catalog. Once a determination is made of the highest flow zone, you can use the procedure above to calibrate the Flow-Clik to the system.

**For example, Figure 1 shows a typical zone using I-20 rotors. To estimate the total flow of the zone:**

1. Determine the approximate water pressure at the base of the sprinklers in each zone while the system is operating. In the illustrative example it has been determined that the sprinkler pressure in zone 4 is 50 psi.
2. Identify the model of sprinkler and its associated nozzle for each valve. Valve 4 has Hunter I-20 rotors that have various nozzles based on the distance of throw and the arc of coverage needed. For reference, the quantities of each type of sprinkler and nozzle configuration for zone 4 is identified in the attached irrigation legend.
3. Determine the flow rate for each sprinkler and nozzle configuration. Based upon information found in the Hunter Catalog the associated flows for each Hunter I-20 sprinkler and nozzle configuration is listed in the attached irrigation legend.

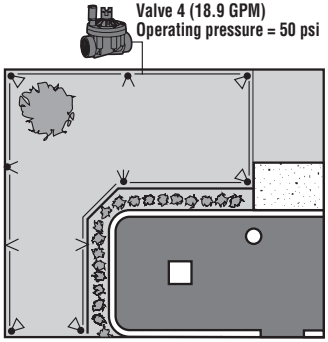



**Figure 1**

4. Determine the total flow of all sprinklers on the zone. The total flow of zone 4 in this example is 18.9 GPM as identified in the irrigation legend.

| Symbol | Sprinkler Description | *Flow @ 50 psi | | Qty | Total Flow |
|---|---|---|---|---|---|
|  | Hunter I-20-ADS – 1.5 | 1.6 | x | 3 | = 4.8 |
|  | Hunter I-20-ADS – 3.0 | 2.7 | x | 2 | = 5.4 |
|  | Hunter I-20-ADS – 4.0 | 4.2 | x | 1 | = 4.20 |
|  | Hunter I-20-ADS – .75SR | .75 | x | 2 | = 1.50 |
|  | Hunter I-20-ADS – 1.5SR | 1.5 | x | 2 | = 3.0 |

**Total Flow = 18.9 GPM**

*Information obtained from the Hunter catalog

**Figure 1 Legend**

## Manual Cycle Method

You can also use your controller to help calibrate the Flow-Clik in a system with unknown flow rates among zones. This method is easy, accurate and prevents the user from having to count and estimate system zone flows. Simply operate your controller manually and sequentially "learn" as you cycle through each of the zones.

**To calibrate the Flow-Clik with the Manual Cycle Method:**

1. Start a manual cycle on the controller beginning with the first zone (for Hunter controllers, use the One Touch Manual Advance feature).
2. Press and hold the Flow-Clik-IMMS Calibrate button on the top of the sensor. The System Status Indicator will change to yellow indicating that the Flow-Clik is "learning" the flow of the zone. Release the button when the yellow light appears. When finished calibrating, the System Status Indicator will begin to flash green.
3. Advance the controller sequentially to the next zone. Wait a few seconds for a change in the System Status Indicator. If the indicator begins flashing red/green or flashing red, repeat Step 2. If the indicator continues to flash green, advance the controller to the next zone.
4. Repeat until all zones have been checked.
5. Set the Startup Delay and Interrupt Period settings (see Programming the Startup Delay and Interrupt Period).

**NOTE: If your controller is programmed to operate more than one zone at a time, those zones will have to be activated together to calibrate the Flow-Clik to total system flow.**

# SENSOR PROGRAMMING IN IMMS.....

## Sensor Setup

IMMS Software allows for easy programming of the Flow-Clik-IMMS sensor. The sensor setup is conducted in the hardware setup section for either the site or controller interface which the Flow-Clik-IMMS is wired to. Figure 1 shows the setup screen for the Controller Interface.

To setup the Flow-Clik-IMMS select a Site or Controller Interface from the IMMS system tree and then click the harware tab. Select the sensor number which the Flow-Clik-IMMS was wired to (see wiring the sensor to the IMMS system). Select Flow-Clik-IMMS for the sensor model.

Selecting the sensor model activates the “Sensor Response” box. Click the down arrow to select report only or shutdown controller (for SI and CI installations) or shutdown site (for SI installation).

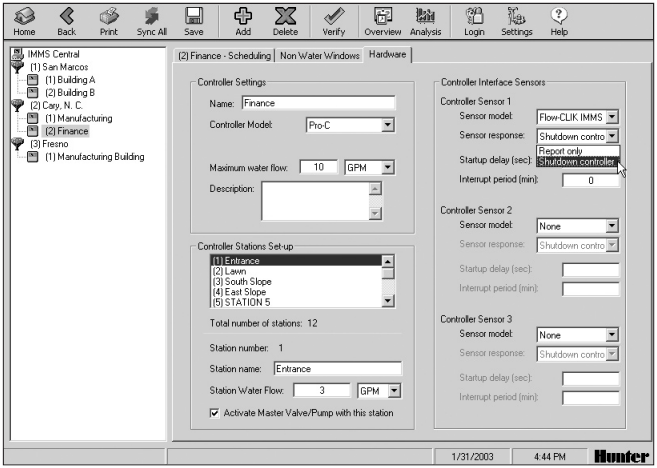
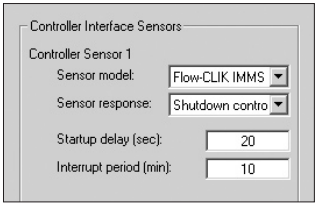



**Figure 1**

## PROGRAMMING THE STARTUP DELAY

The high velocities that are common during initial activation of an irrigation cycle could cause the Flow-Clik-IMMS to sense a “high flow” situation (primarily due to air trapped within the system) and subsequently shut down the irrigation system at the beginning of every cycle. The Flow-Clik-IMMS addresses the problem by providing a programmable Startup Delay to allow the system to stabilize prior to the Flow-Clik-IMMS monitoring for high flow conditions. The IMMS software allows the user to select a start up delay from 0 seconds to 300 seconds.

**NOTE: The startup delay required may vary between zones. Select the largest start up delay required for all zones.**




## PROGRAMMING THE INTERRUPT PERIOD

The Flow-Clik-IMMS monitors for a high flow condition, shutting down the system or individual zone when overflow occurs. Once the system has been shut off due to a high flow condition, the Flow-Clik-IMMS turns the system back on automatically after a pre-selected amount of time has passed. By waiting out a selected amount of time, the system is allowed to resume watering areas that may not be affected by the “problem.”

The IMMS software has nine pre-selected interrupt periods from 5 to 60 minutes. Click the down arrow to select the desired interrupt period.

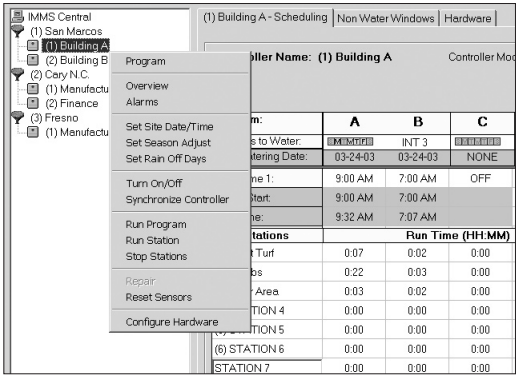
**Example:** A system that is mostly spray zones set for 10 minute run times could select a delay of 10 minutes so the system is only off during the operation if a single zone.

A manual restart feature is also provided. If the Flow-Clik-IMMS is programmed to Restart Manually, an overflow condition will result in a shutdown of the irrigation system until the system has been manually reset at the IMMS central computer.

# PROGRAMMING THE INTERRUPT PERIOD (continued).....

**To manually restart the system after an overflow condition has occurred (Flow-Clik-IMMS programmed to restart manually):**

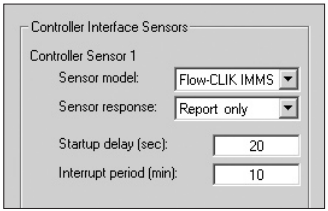
The Flow-Clik-IMMS can be reset at the central computer. Select the controller that is deactivated by the Flow-Clik-IMMS sensor. Right mouse click will display the menu. Select Reset Sensors. The central computer will communicate the command to the Flow-Clik sensor and resume irrigation.




## Sensor Bypass

The Sensor Bypass switch on all Hunter controllers allows the user to manually override the Flow-Clik sensor. This is helpful during situations that require the system to operate at higher than “learned” flow rates (i.e. system winterization, running a hose bib, or operating multiple valves).

Bypassing the Flow-Clik-IMMS sensor can also be done at the IMMS central computer. Changing the sensor response setting from shutdown controller to report an alarm only and not shutdown the system.



# TROUBLESHOOTING GUIDE

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| **System Status Indicator light is off** | No AC power to the Flow-Clik-IMMS sensor | A) Check that the power leads (yellow wires) are attached to the 24 VAC terminals on the Site or Controller Interface.<br><br>B) Verify that the power to the Site or Controller Interface is on. |
| **System Status Indicator is flashing red/green** | Irrigation system is in an overflow condition | Normal operation during an overflow condition. The system overflow has not reached a level high enough for system shutdown. |
| **System Status Indicator light is flashing red** | Irrigation system is in an overflow condition | Normal operation during an overflow condition. The Flow-Clik-IMMS has identified overflow condition high enough for system shutdown and is waiting the pre-set startup delay period before shutting the system off. |
| **System Status Indicator is steady green** | Irrigation system is in an overflow condition | A) Irrigation system automatic cycle has not yet started. Power is applied to the Flow-Clik-IMMS.<br><br>B) The Flow-Clik-IMMS has identified an overflow condition and is waiting the predetermined amount of time set as the Interrupt Period before restarting the irrigation cycle.<br><br>C) The Interrupt Period setting is in the Manual Restart position requiring that the Flow-Clik-IMMS be reset before irrigation can resume. (see “Programming the Interrupt Period” on page 17) |

## TROUBLESHOOTING GUIDE (continued) .....

| | | |
|---|---|---|
| **Flow-Clik will not shut the irrigation system off** | No power to Flow-Clik-IMMS | Check System Status Indicator light is on (if light is off, see previous). |
| | Faulty wire connections from the Flow-Clik-IMMS sensor to the IMMS Interface Box | Check Flow-Clik sensor wires are properly connected. (see “Wiring the Flow-Clik to the IMMS” on page 10) |
| | System has not reached an overflow condition | A) Normal operation. |
| | | B) System is not balanced. Too much variation between flow rates of the zones may prevent the Flow-Clik-IMMS from sensing an overflow condition on the lower flow zone(s). Flow-Clik-IMMS can only sense flows above the calibrated maximum flow. |
| | System is in the Startup Delay mode | Wait for start up delay period to end. |
| | Flow-Clik not programmed properly in IMMS central computer | A) Check IMMS central computer hardware setup to verify correct sensor position. |
| | | B) Flow-Clik response setting on “Report only” |

| | | |
|---|---|---|
| **Flow-Clik continually shuts off a zone with no known problems** | Flow-Clik is improperly calibrated | Reset the Flow-Clik-IMMS to the highest flow zone. (see page 13) |
| | High fluctuations in system pressure | It is recommended that the Flow-Clik be set at the time of day that the irrigation system will be run. Note: If too much pressure fluctuation occurs, it may be necessary to add pressure regulation to the system. |
| **System Status Indicator light is not Flashing Green when the system is running** | Faulty wiring connections from the Flow-Clik sensor to the Interface Box | Check Flow-Clik sensor wires are properly connected. (see "Wiring the Flow-Clik to the IMMS" on page 10) |
| | AC power not being supplied to the sensor | Check the wiring connections from the sensor to the Site or Controller Interface. |
| | Debris is stuck in the impeller of the Flow-Clik sensor | Confirm that system pressure is off. Remove cap and pull sensor out of the sensor body and inspect for debris or damage. |
| **System will not turn back on after overflow shutdown** | Flow-Clik-IMMS is programmed to restart manually | Reset Flow-Clik at IMMS central control. (see page 18) |

# FREQUENTLY ASKED QUESTIONS

**What is the ideal location for a Flow-Clik-IMMS sensor in my irrigation system?**

If your system is balanced (similar flow rates among all zones), the best position for the Flow-Clik sensor would be just downstream of the master valve in your system. Make sure the sensor is at least 10 times the pipe diameter in distance away from the outlet of the master valve.

**Do I need a master valve to use the Flow-Clik-IMMS?**

The use of a master valve is preferred when installing a Flow-Clik in your system. The Flow-Clik is designed to prevent water loss due to catastrophic failure of your irrigation system. If a master valve is used at the beginning of the mainline, the Flow-Clik can provide maximum protection in shutting off the system when mainline ruptures occur.

**My controller is running two valves at one time. Is this a problem?**

No. The Flow-Clik-IMMS is designed to be calibrated to your highest flow zone(s). If you are operating more than one valve with your controller, both valves need to be operating at the same time during Flow-Clik-IMMS calibration and setup.

**Should I be concerned about winterization with the Flow-Clik-IMMS?**

Typically, systems are winterized using compressed air to "blow out" the water in a system. Depending upon the location of the Flow-Clik sensor in the irrigation system, it may sense a "high flow" condition due to air moving the sensor at a very high rate. It is recommend that the Flow-Clik be shut off before winterization by using the sensor bypass switch at the controller to deactivate the sensor.

**Can I use one Flow-Clik-IMMS sensor with two irrigation controllers on the same system?**

Yes. The Flow-Clik-IMMS is designed to work directly with the IMMS system. If the site has a Site Interface along with one or more Controller Interfaces, connecting the Flow-Clik-IMMS to the Site Interface will allow you to program the Flow-Clik to shut down all the controllers on a same site.

**Can I use multiple Flow-Clik sensors on the same system?**

Yes. Flow-Clik sensors can be installed on multiple lateral lines within your irrigation system for a higher level of overflow protection. The IMMS Site and Controller Interface can each operate up to 3 sensors.

**How long will the Flow-Clik keep my system off if an overflow condition occurs?**

The IMMS allows the user to customize the Flow-Clik operation based upon the specific system. The software provides for 9 pre-set Interrupt delay positions from 5 to 60 minutes that are set by the user. There is also a manual re-start setting that requires the user to manually re-start the irrigation system if an overflow condition has shut the system off.

**How do I know my Flow-Clik is working?**

The Flow-Clik-IMMS has a System Status Indicator that provides information on the status of your Flow-Clik. Reference page 3 of this manual.

**Will I lose my controller settings if the Flow-Clik-IMMS shuts my system off due to an overflow condition?**

No, the Flow-Clik-IMMS switches off the solenoid valves of the irrigation system when it senses an overflow condition This prevents flow of water to the sprinklers without affecting the operation of the timer. Once the Flow-Clik has reached the end of the Interrupt Period programmed into the Interface Box, the valves resume normal operation.

# SPECIFICATIONS

## Operating Specifications

Temperature: 0 to 150 degrees F

Pressures: up to 200 psi

Humidity: up to 100%

## Additional Features

Programmable Start Up Delay (0 to 300 seconds)

Programmable Interrupt Period (5 to 60 minutes)

System Status Indicator Light

One Button System Calibration

# SPECIFICATIONS (continued)

| FLOW RANGE | | | |
|---|---|---|---|
| FLOW SENSOR DIAMETER | OPERATING RANGE (GPM) | | |
| | MINIMUM* | SUGGESTED MAXIMUM** | MAXIMUM |
| 1" | 6 | 17 | 50 |
| 1½" | 13 | 35 | 100 |
| 2" | 20 | 55 | 200 |
| 3" | 50 | 120 | 300 |

** Minimum recommended flow for the highest flow zone for your system*

*** Good design practice dictates the maximum flow not to exceed 5ft/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe*

## Electrical Specifications

Current Draw: (@ 24 VAC) .025 amps

Switching Current: 2.0 amps

Maximum Distance between Interface Box and Sensor = 1,000 ft.

## Dimensions

Flow-Clik Sensor Body (FCT Series)

FCT-100 (4.8"H x 2.3"W x 4.5"L)

FCT-150 (5.4"H x 2.3"W x 4.6"L)

FCT-158 (5.4"H x 2.3"W x 5.1"L)

FCT-200 (5.9"H x 2.7"W x 4.7"L)

FCT-208 (6.0"H x 2.9"W x 5.4"L)

FCT-300 (7.0"H x 4.0"W x 6.2"L)

FCT-308 (7.0"H x 4.2"W x 6.4"L)

**Hunter Industries Incorporated • The Irrigation Innovators**
1940 Diamond Street • San Marcos, California 92069
www.HunterIndustries.com



P/N 715035 LIT-369 5/03