



## HUNTER CONTROLLERS

### TROUBLESHOOTING AND WARRANTY

FOR ONLINE EXAMPLES GO TO....

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# WARRANTY CHECK LIST

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- **STEP 1**

1. Controller must be in the valid Warranty period
2. Not Warranty if damaged by lightning strike
3. Not Warranty if damaged by insect infestation
4. Not Warranty if door left open and rain gets into internals
5. Not Warranty if an indoor controller is installed outdoors
6. Not Warranty if mistreated or damaged by the customer

- **STEP 2**

Please ensure you have checked the relevant controller 'Reset'; 'Quick Check', 'Quick Test' and 'Troubleshooting Guide' attached

- **STEP 3**

If Warranty still applies, please complete the following

Dealer/Contractor .....

Date of purchase .....

Sales Representative .....

**\*\*\*\*\*If out of Warranty, please talk to your dealer to discuss repair options.**

## HUNTER XC HYBRID TROUBLESHOOTING GUIDE

| PROBLEMS                                                                                                  | CAUSES                                                                                                                                                                                                         | SOLUTIONS                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The Controller is continuously watering</b>                                                            | Too many start times have been programmed.                                                                                                                                                                     | Only one start time is necessary to activate a program                                                                                                 |
| <b>There is no display</b>                                                                                | Check batteries or AC power                                                                                                                                                                                    | Correct and errors                                                                                                                                     |
| <b>Display reads "off"</b>                                                                                | The rain sensor is interrupting irrigation or the sensor jumper has been removed                                                                                                                               | Slide the rain sensor bypass switch to BYPASS position to bypass the rain sensor circuit or reinstall the jumper                                       |
| <b>Rain sensor will not shut off the system</b>                                                           | Deactivate the rain sensor.<br><br>Jumper was not removed when sensor was installed<br>Stations have been programmed to override the sensor                                                                    | Verify operation of rain sensor and proper wiring<br><br>Remove jumper from the sensor terminals<br>Reprogram the sensor override to enable the sensor |
| <b>Frozen display, or showing incorrect information</b>                                                   | Power Surge                                                                                                                                                                                                    | Reset the controller                                                                                                                                   |
| <b>Display shows a station is running but the umbrella and sprinkler icons are flashing</b>               | The sensor is interrupting irrigation, however the station has been programmed to override the sensor                                                                                                          | Check the programmable Sensor Override status                                                                                                          |
| <b>Automatic irrigation does not start at the start time and controller is not in the System Off mode</b> | AM/PM of time/day not set correctly<br><br>AM/PM of start time not set correctly<br>Start Time is disabled (set on OFF)<br>Batteries are dead<br>Controller is not receiving AC power (if using a transformer) | Correct AM/PM time<br><br>Correct AM/PM time<br>Check Program start times<br>Replace Batteries<br>Check AC power connections                           |

# HUNTER XC HYBRID QUICK CHECK AND RESET FEATURES

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## **Clearing the Controller's Memory/Resetting the Controller:**

If you feel you have misprogrammed the controller, there is a process that will reset the memory to the factory defaults and erase all programs and data that have been entered into the controller.

Press and hold down the  button.

Press and release the reset button in the lower wiring compartment.

Wait 2 seconds and release the  button. The display should now show 12:00 AM. All the memory has been cleared and the controller may now be reprogrammed.

## **Easy Retrieve™ Program Memory:**

The XC is capable of saving the preferred watering program into memory for retrieval at a later time.

This feature allows for a quick way of resetting the controller to the original programmed watering schedule.

### **To save the program into the memory:**

With the dial in the **RUN** position, press and hold the  and  buttons for 5 seconds. The display will scroll three segments from left to right across the display indicating the program is being saved into memory.

Release the  and  buttons.

### **To retrieve a program that was previously saved into memory:**

With the dial in the **RUN** position, press and hold the  and  buttons for 5 seconds. The display will scroll three segments from right to left across the display indicating the program is being saved into memory.

Release the  and  buttons.

**Programmable Delay Between Stations:**

This feature allows the user to insert a delay between stations between when one station turns off and the next one turns on.

Start with the dial in the **RUN** position.

Press and hold the  button down while turning the dial to the **RUN TIMES** position.

Release the  button. At this point the display will show a delay time for all stations in seconds, which will be flashing. Press the  or  buttons to increase or decrease the delay time between 20 seconds and 4 hours.

Return the dial to the **RUN** position.

## HUNTER X CORE TROUBLESHOOTING GUIDE

| PROBLEMS                                               | CAUSES                                                                                                                                               | SOLUTIONS                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The Controller is continually watering</b>          | Too many start times have been programmed                                                                                                            | Only one start time is necessary to activate a program                                                                                                                                                                                                                                                                                                         |
| <b>There is no display</b>                             | Check AC power wiring                                                                                                                                | Correct any errors                                                                                                                                                                                                                                                                                                                                             |
| <b>The display reads "NO AC"</b>                       | There is no AC power present, or the controller is not receiving any power                                                                           | Check to see if the transformer is properly installed                                                                                                                                                                                                                                                                                                          |
| <b>Rain sensor will not shut off the system</b>        | Defective rain sensor<br><br>Jumper was not removed when sensor was installed<br><br>Stations have been programmed to override the sensor            | Verify operation of rain sensor and proper wiring<br><br>Remove jumper from the sensor terminals<br><br>Reprogram the sensor override to enable the sensor                                                                                                                                                                                                     |
| <b>Display shows ERR with a number (1-8)</b>           | Short in valve wiring circuit, or faulty solenoid on the station number indicated                                                                    | Check wire circuit or solenoid for the valve number indicated. Repair short or replace solenoid. Press any button to clear the ERR from the display                                                                                                                                                                                                            |
| <b>Frozen display or showing incorrect information</b> | Power Surge                                                                                                                                          | Reset the controller                                                                                                                                                                                                                                                                                                                                           |
| <b>Display shows P ERR</b>                             | Faulty pump relay or master valve wiring<br><br>Incompatible or defective relay or solenoid<br><br>Undersized wire to the pump relay or master valve | Check wiring to relay or master valve solenoid. Press any button to clear the error<br><br>Check electrical specification for the pump relay. Do not exceed controller's electrical rating. Replace defective<br><br>Replace wire length                                                                                                                       |
| <b>Seasonal Adjust Seems too high</b>                  | Region too low<br>Water Adjustment setting too high                                                                                                  | Decrease the value of the Water Adjustment setting. If you minimize the Water Adjustment scale at 1 and still require reduced seasonal adjustment, move up one Region. Solar Sync will immediately update the Seasonal Adjust on the controller. If it is still too high, repeat the adjustment until the desired seasonal adjust is showing on the controller |

|                                                                                                                      |                                                                                                                                                                             |                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Solar Sync still sending Seasonal Adjust when Controller Bypass switch is in the 'Bypass' position</b>            | Solar Sync's automated Seasonal Adjustment cannot be de-activated by the Bypass switch. The Bypass switch only controls the Rain/Freeze shut off function of the Solar Sync |                                                                                                                                                                    |
| <b>After removing the Solar Sync sensor from the controller the seasonal adjust value cannot be changed manually</b> | The Solar Sync sensor need to be uninstalled if permanently removing it from the controller                                                                                 | After removing the Solar Sync sensor from the controller turn the knob to Solar Sync Settings. The screen should show dashed lines. The sensor is now uninstalled. |
| <b>Display shows "no SS"</b>                                                                                         | <p>Solar Sync sensor has been disconnected from controller but is not uninstalled</p> <p>Wiring connection from Solar Sync connection is faulty</p>                         | <p>Check Solar Sync sensor wiring connection to controller</p> <p>Uninstall Solar Sync sensor if permanently removing it from the controller</p>                   |

# HUNTER X CORE QUICK CHECK AND RESET FEATURES

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## Clearing the Controller's Memory/Resetting the Controller

If you feel you have misprogrammed the controller, there is a process that will reset the memory to the factory defaults and erase all programs and data that have been entered into the controller.

Press and hold down the , ,  and buttons.

Press and release the reset button on the side of the controller

Wait 2 seconds and release the , ,  and buttons. The display should now show 12:00 am. All the memory has been cleared and the controller may now be reprogrammed.

## Easy Retrieve™ Program Memory

The X-Core is capable of saving the preferred watering program into memory for retrieval at a later time. This feature allows for a quick way of resetting the controller to the original programmed watering schedule.

### To save the program into the memory

With the dial in the RUN position, press and hold the  and  buttons for 5 seconds. The display will scroll three segments from left to right across the display indicating the program is being saved into memory.

Release the  and  buttons.

### To retrieve a program that was previously saved into memory.

With the dial in the RUN position, press and hold the  and  buttons for 5 seconds. The display will scroll three segments from right to left across the display indicating the program is being saved into memory.

Release the  and  buttons.

### **Programmable Delay Between Stations**

This feature allows the user to insert a delay between stations between when one station turns off and the next one turns on.

Start with the dial in the RUN position.

Press and hold the  button down while turning the dial to the RUN TIMES position. Release the  button. At this point the display will show a delay time for all stations in seconds, which will be flashing.

Press the  or  buttons to increase or decrease the delay time between 0 and 4 hours.

Return the dial to the RUN position.

## HUNTER PRO C / PCC TROUBLESHOOTING GUIDE

| PROBLEM                                                             | CAUSES                                                                            | SOLUTIONS                                                                                                                                                                                 |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>There is no display.</b>                                         | Check AC power wiring.                                                            | Correct any errors.                                                                                                                                                                       |
| <b>The display reads "ERR".</b>                                     | Electrical noise is entering the system.                                          | Check the SmartPort® wiring harness. If the wires were extended then they will need to be replaced with shielded cable. Contact your local distributor for information on shielded cable. |
| <b>The display reads "P ERR".</b>                                   | There is a fault in the wire to the pump start or master valve.                   | Check the master valve or pump start wire for continuity. Replace or repair the shorted wire. Check that all wire connections are good and water tight.                                   |
| <b>The display reads a station number and ERR, such as "2 ERR".</b> | There has been a fault with the wire leading to that station.                     | Check the station wire for continuity. Replace or repair shorted wire. Check that all wire connections are good and water tight.                                                          |
| <b>The display reads "NO AC".</b>                                   | There is no AC power present (the controller is not receiving power).             | Check to see if the transformer is properly installed.                                                                                                                                    |
| <b>The display reads "SENSOR OFF".</b>                              | The rain sensor is interrupting irrigation or the sensor jumper is not installed. | Slide the Rain Sensor switch on front panel to the <b>BYPASS</b> position to bypass rain sensor circuit, or install the sensor jumper.                                                    |
| <b>Rain sensor will not shut off system.</b>                        | Incompatible rain sensor or the jumper was not removed when sensor was installed. | Make sure sensor is micro-switch type such as Mini-Clik® (Rain Bird® Rain Check is not this type and will not work). Check that the jumper has been removed from the SEN terminals.       |
| <b>The controller recognizes 12 stations all the time.</b>          |                                                                                   | Make sure AC power is connected.                                                                                                                                                          |

|                                                                                                                                             |                                                |                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The controller does not respond to all stations. Example, the controller has 12 stations but the display will only go to 6 stations.</b> | Controller does not recognize modules.         | Press "RESET" if it still does not recognize all modules, turn off the power to the controller and remove the battery. Check all module connections to the controller. Power the controller back up. The microprocessor will recognize all modules. |
| <b>The controller does not have a start time for each station.</b>                                                                          | Programming error, dial in incorrect position. | Be sure the dial is in correct position. Total number of stations can be easily checked by placing dial in <b>SET STATION RUN TIMES</b> position and pressing the back arrow.                                                                       |
| <b>The controller is continuously watering, even when it should not be on/ Cycling repeatedly.</b>                                          | Too many start times (user error).             | Only one start time per active program is required. Refer to "Setting Watering Start Times".                                                                                                                                                        |
| <b>There are not enough start times for all stations.</b>                                                                                   | User error.                                    | The controller has only four start times per program.                                                                                                                                                                                               |
| <b>Controller continues cycling over and over.</b>                                                                                          | Programming error.                             | User has set multiple start times for a Program. Only one start time is needed to run a complete program.                                                                                                                                           |

# HUNTER PRO C/PCC QUICK CHECK & RESET FEATURES

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## Easy Retrieve™ Program Memory:

The Pro-C is capable of saving the preferred watering program into memory for retrieval at a later time. This feature allows for a quick way of resetting the controller to the original programmed watering schedule.

### To save the program into memory:

With the dial in the **RUN** position, press and hold the  and  buttons for 5 seconds. The display will scroll from left to right across the display indicating the program is being saved into memory.

Release the  and  buttons.

### To retrieve a program that was previously saved into memory:

With the dial in the **RUN** position, press and hold the  and  buttons for 5 seconds. The display will scroll from right to left across the display indicating the program is being saved into memory.

Release the  and  buttons

## Hunter Quick Check™:

This circuit diagnostic procedure is can quickly identify “shorts” commonly caused by faulty solenoids or when a bare common wire touches a bare station control wire.

### To initiate the Hunter Quick Check test procedure:

Press the , ,  and  buttons simultaneously. In the standby mode, the LCD will display all segments (helpful when troubleshooting display problems).

Press the  button to begin the Quick Check test procedure. The system will search all stations to detect a high current path through the station terminals. When a field wiring short is detected, an ERR symbol preceded by the station number will momentarily flash on the controller LCD display. After the Hunter Quick Check completes running this circuit diagnostic procedure, the controller returns to the automatic watering mode.

### Clearing Controller's Memory/Resetting Controller:

If you feel that you have misprogrammed the controller, there is a process that will reset the memory to factory defaults and erase all programs and data that have been entered into the controller. Press and hold the  button. Press and release the **RESET** button on the back of the front panel. Wait until the display shows 12:00am. Release the  button. All the memory has been cleared and the controller may now be reprogrammed.

## HUNTER ICC TROUBLESHOOTING GUIDE

| PROBLEM                                                                                                                                          | CAUSES                                                                       | SOLUTIONS                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>There is no display.</b>                                                                                                                      | Check AC power wiring.                                                       | Correct any errors.                                                                                                                                                                                                                                 |
| <b>The display reads "P ERR".</b>                                                                                                                | Electrical noise is entering the system.                                     | Check the SmartPort® wiring harness. If the wires were extended then they will need to be replaced with shielded cable. Contact your local distributor for information on shielded cable                                                            |
| <b>The display reads "P ERR".</b>                                                                                                                | There is a fault in the wire to the pump start or master valve.              | Check the master valve or pump start wire for continuity. Replace or repair the broken wire. Check that all wire connections are good and water tight.                                                                                              |
| <b>The display reads a station number and ERR, such as "2 ERR".</b>                                                                              | There has been a ground fault with the wire leading to that station.         | Check the station wire for continuity. Replace or repair broken wire. Check that all wire connections are good and water tight.                                                                                                                     |
| <b>The display reads "NO AC".</b>                                                                                                                | There is no AC power present.                                                | Check to see if the transformer is properly installed.                                                                                                                                                                                              |
| <b>The display reads "SEN OFF".</b>                                                                                                              | The rain sensor is interrupting irrigation or not installed.                 | Slide the Rain Sensor switch on front panel to the <b>OFF</b> position to bypass rain sensor circuit.                                                                                                                                               |
| <b>The Controller does not start automatically.</b>                                                                                              | Potential user programming error.                                            | Check to make sure start time is entered correctly (note AM/PM setting as well). Check to make sure watering day is active.                                                                                                                         |
| <b>Rain sensor will not shut off system.</b>                                                                                                     | Incorrect sensor type wired directly into sensor circuit. Jumper not removed | Make sure sensor is microswitch type such as Mini-Clik®. Jumper removed.                                                                                                                                                                            |
| <b>The controller recognizes 48 stations all the time.</b>                                                                                       |                                                                              | Make sure AC power is connected. Reset controller using method described here.                                                                                                                                                                      |
| <b>The controller does not respond to all the stations. Example, the controller has 24 stations but the display will only go to 16 stations.</b> | Controller does not recognize modules.                                       | Press "RESET" if it still does not recognize all modules, turn off the power to the controller and remove the battery. Check all module connections to the controller. Power the controller back up. The microprocessor will recognize all modules. |

|                                                                                               |                                                                                                          |                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The controller is only recognizing eight stations when multiple modules are installed.</b> | Potential user programming error.                                                                        | Be sure dial is in correct position. Total number of stations can be easily checked by placing dial in <b>SET STATION RUN TIMES</b> position and pressing the back arrow. |
| <b>Controller has display but will not activate zone valves.</b>                              | Primary power to controller incorrectly wired. Controller receiving voltage too low for valve operation. | Check and correct 110 or 220 volt connection.                                                                                                                             |
| <b>The controller is continuously watering, even when it should not be on.</b>                | Too many start times.                                                                                    | Only one start time per active program is required.                                                                                                                       |
| <b>There are not enough start times for all stations.</b>                                     | User error.                                                                                              | The controller has eight start times per program. Review Programming Fundamentals to understand how Start Times work.                                                     |
| <b>Controller continues cycling over and over.</b>                                            | Programming error.                                                                                       | User has set multiple start times for a Program. Only one start time is needed to run a complete program.                                                                 |

# HUNTER ICC QUICK CHECK AND RESET FEATURES

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## Clearing Non Volatile Memory:

Turn the dial to **RUN**

Press the , , and  buttons down simultaneously.

Whilst the 3 buttons are being held down, momentarily press and release the **RESET** button

Release the , , and  buttons. The LCD display will show 12.00am

## Test Program:

The ICC allows the user a simplified method for running a test program. This feature operates each station in numerical sequence, from the lowest to the highest. You can start with any station. This is a great feature to check the operation of your irrigation system.

To initiate the test program:

Press and hold the  button. The station number will be flashing.

Press the  or  button to scroll to the station you would like the test program to start with. Use the  or  button to set the run time up to 15 minutes. The run time needs to be entered only once.

After a 2 second pause, the test program will begin.

## Hunter Quick Check™:

Irrigation professionals are continuously looking for ways to more efficiently and effectively diagnose programs in the field. Instead of having to physically check each field wiring circuit for potential problems, the user can run the Hunter Quick Check™ circuit test procedure. This circuit diagnostic procedure is very beneficial because of its ability to aid in quickly identifying “shorts” commonly caused by faulty solenoids or when a bare common wire touches a bare station control wire.

To initiate the Hunter Quick Check™ test procedure; Press the  ,  ,  ,  buttons. In the standby mode, the LCD will display all segments (helpful when troubleshooting display problems). Press the  button to begin the Quick Check™ test procedure. Within seconds, the system searches all stations in an effort to detect a high current path through the station terminals. When a field wiring short is detected, an ERR symbol preceded by the station number will momentarily flash on the controller LCD display. After the Hunter Quick Check™ completes running this circuit diagnostic procedure, the controller returns to the automatic watering mode.

## HUNTER I CORE TROUBLESHOOTING

| PROBLEM                                                      | CAUSES                                                                                                                     | SOLUTIONS                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No display</b>                                            | Check AC power to controller<br>14 pin connector not fully connected<br>Module locking bar isn't in the Power Off position | Fix power supply<br>Connect ribbon cable on back on face pack door<br>Slide the module locking bar into the Power On position                                                                                                                                |
| <b>The display reads NO AC Power</b>                         | No AC power present to operate controller/valves                                                                           | Check to see if the transformer is properly installed or power is coming out of it                                                                                                                                                                           |
| <b>Display reads "Fault"</b>                                 | Overflow/Underflow alarm has occurred                                                                                      | Check System for problems                                                                                                                                                                                                                                    |
| <b>Possible station short</b>                                |                                                                                                                            | Check solenoid and field wiring                                                                                                                                                                                                                              |
| <b>Display reads sensor is active</b>                        | The rain sensor is interrupting irrigation or not installed                                                                | Slide the rain sensor switch on front panel to the bypass                                                                                                                                                                                                    |
| <b>Station does not irrigate</b>                             | Field wiring or solenoid problem                                                                                           | Perform manual Single-Station start and observe display and Station Status light.<br><br>If Station Status light is RED, check solenoid and filed wiring including COM wires, Station outputs must not exceed 0.56A max.                                     |
| <b>The controller does not irrigate automatically</b>        | Possible programming errors<br><br>Sensor Shutdown<br>Programmable Off in effect<br>Time/Date errors                       | Verify all programs Days to water, start times and Station Run Times.<br><br>Check display for fault indicator<br>Check display for OFF days<br>Verify controller time and date, including AM/PM/24 settings                                                 |
| <b>Rain or other Click sensor does not shut down systems</b> | Incorrect sensor type or connection (Jumper Installed)<br><br>Incorrect sensor settings for stations                       | Use one normally closed Click type sensor per sensor ports. Verify the one wire from each sensor is to each SEN1 or SEN2 terminals. Remove jumper wire.<br><br>Turn dial to SET SENSOR OPERATION and verfiy correct response for each station ot the sensor. |

|                                                                                                                               |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The controller repeats a program or continuously waters even when it should not be on/ controller cycles over and over</b> | Too many start times (user programming error).                                               | Use only one start time per active Program.                                                                                                                                                                                                                                                                                                                                                   |
| <b>Controller does not recognize output module (station size show in incorrect)</b>                                           | Module seated incorrectly<br><br>Module slot skipped<br><br>Station output module overloaded | Verify that modules are seated all the way back in the wiring compartment and module lock is ON<br>Verify that no module slots have been skipped from left to right<br>Swap with known good module in the same position. If now module works in the position, replace the old module. If new known good module also fails to be recognizes, check gold contacts for dirt, corrosion or pests. |

# I CORE QUICK CHECK

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## **The Hunter Quick Check:**

An efficient and effective way to diagnose problems in the field. Instead of having to physically check each field wiring circuit for potential problems, the user can run the Hunter Quick Check circuit test procedure. This circuit diagnostic procedure is very beneficial to quickly identify "shorts" commonly caused by faulty solenoids or when a bare common wire touches a bare station control wire.

## **To initiate Hunter Quick Check:**

With the dial in the RUN position, press and hold the  ,  ,  or  buttons for approximately two seconds and then release.

After a few seconds, the display will show a number 1. Press the  button.

The screen will initially show a number 20 and within one second, the Hunter Quick check will begin. The controller will begin searching all stations in an effort to detect a high current path through the station terminals. If a field wiring short is detected on a station, the controller will display a fault message for each faulty station.

## **Blank Dial Position:**

This dial position is for future use.

# ICORE DUAL TROUBLESHOOTING

## TROUBLESHOOTING

### Important tools

#2 Phillips screwdriver,

Calculator

ICD-HP Handheld Programmer

Known-good solenoid

Known-good decoder

Digital Multimeter

### ICD-HP Handheld Wireless Programmer



This Hunter product allows wireless connection with DUAL decoders, even when they are wired into field installations. The ICD-HP allows direct diagnostics, operation, and programming of any DUAL decoder installed in a valve box. ICD-HP can also verify status of solenoids, read voltage, and test sensors. The ICD-HP is highly recommended for field troubleshooting and will pay for itself in greatly reduced setup, programming, and diagnostic time.



### Faults and Fault Messages

**Faults:** Controller display shows "Fault". This may be followed by a station number.

The Station Status light on the ICore System Status dashboard will also show a red LED when there has been a decoder fault.



**NOTE:** Fault light and message are only visible when stations are not running. During active irrigation, the Fault will not be visible.

If one or more station numbers are listed on the display, troubleshoot those stations. If there is no station number, troubleshoot the two-wire path connections.

1. Open the controller inner door to see additional diagnostic information on the DUAL48M display. The display may show Line Open or Line Fault.



The message may alternate with other screens. Allow a few seconds to see all displays.

## TROUBLESHOOTING

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2. Press the Mode (center) button on the DUAL48M control panel. Select "Diagnostics" with the ▲▼ arrows, and press Mode to select.
3. Press the Mode button to select "Read Current". This will show the current draw in milliamps (ma). In standby (no stations running), the total should be approximately 3-4mA multiplied by the number of decoders in the system. The number of decoders on the two-wire paths determines the correct current for the system.



When a station is turned on, the milliamps should increase by approximately 40mA, per solenoid attached to the active station.

- If a station is turned on, and the milliamps don't increase enough, the controller will show a Station Fault followed by the station number.
- If a station is turned on, and the milliamps increase by more than the controller will allow, the controller will show a Station Fault followed by the station number.
- If the milliamps increase too much when no stations are supposed to be running, the controller will show a Fault with no station number.

4. Observe the current draw with no stations running. Divide the current draw by the number of decoder modules connected to the controller. It should be approximately 3-4 mA per decoder.
  - Do not include DUAL-S surge suppression devices in current draw calculations- they do not increase the current.
5. If no problem is observed with the current draw reading in standby (no stations running), turn on a station listed in the Fault message with the Manual Single Station feature, or a wireless remote control.
6. Observe the Current Draw display. The current should increase by approximately 40 milliamps per solenoid connected to the decoder. Wait at least 30 seconds for the controller to complete its retry attempts and for the current to stabilize.

**Line Fault:** If the DUAL48M says "Line Fault" when no stations are running, the most likely cause is a direct short between the two wires in the two wire path (red and blue). If the Line Fault message only appears when a station is turned on, the problem is most likely a short in the decoder-to-solenoid wiring for the affected stations.

| ICore Display                     | DUAL48M display in Standby                                                         | Cause                                                                                                             | Corrective Action                                                                                                            |
|-----------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Fault, no station</b>          | Line Open:<br>Current draw too low on standby                                      | Two-wire path disconnected                                                                                        | Check connections to two wire path                                                                                           |
|                                   | Line Fault:<br>Current draw too high on standby                                    | Short in two-wire path<br>Too many decoders (more than 48) in two-wire path                                       | Check two-wire path (red and blue must not touch)<br>Verify number of decoders in two-wire path                              |
| <b>Fault with station numbers</b> | <b>DUAL48M display with Active Station</b>                                         | <b>Cause</b>                                                                                                      | <b>Corrective Action</b>                                                                                                     |
|                                   | Current Draw for station too low (station number will blink slowly) *              | Decoder not programmed<br>Decoder missing, damaged, or disconnected<br>Solenoid missing, damaged, or disconnected | Program decoder address<br>Repair/replace decoder or connections<br>Repair or replace solenoid or decoder-to-solenoid wiring |
|                                   | Current Draw for station too high (Line Fault will appear when station is running) | Shorted solenoid or solenoid wiring<br>Multiple decoders with same address<br>Too many solenoids connected        | Repair/replace solenoid or decoder-to-solenoid wiring<br>Remove duplicate addresses<br>Remove excess solenoids               |

**\* Current Draw Too Low:** In a low current situation, the controller will retry the command to the station up to 3 times.

The DUAL48M display will show the station number when it is sending the command to the decoder.

If the current does not increase, the station number will disappear for a few seconds. This indicates that the draw did not increase as expected.

After 4-5 more seconds, the station number will re-appear, during the retry attempt.

If low current draw continues, the number will disappear again.

After 3 unsuccessful attempts, the station number will disappear, and the Fault message will appear on the ICore controller facepack display.

The slow blink of the station number is an indication that either the specified decoder, or its solenoids, are not connected or operational.

When a healthy decoder and solenoid are activated, there is no need for the retry attempts, and the station number will not appear to blink.

#### **If No Stations Will Activate:**

1. Verify that slide lock is in the Power On position and that power is on to the DUAL48M module (display appears).
2. Check DUAL48M for "Line Open" message. This means the two-wire path is disconnected from the controller.
3. Check between the controller and the first decoder to verify that the two-wire path is connected.

**If No Stations Will Activate Beyond a Certain Station Number** (followed by multiple station faults): Likely break in two-wire path beyond station 1.

1. Identify failing stations from Fault messages.
2. Identify decoder locations and layout on plan or in wiring path.
3. Begin with last working station, and look for break beyond that point.
4. If multiple two-wire paths are in use, disconnect other paths, and troubleshoot one path at a time.

**Clear Fault Alarms:**

Press the – button on the ICore facepack to clear the Fault message and/or Alarm light.

**Special Notes:**

ICore Decoders are not compatible with mechanical relays.

When combining DUAL48M with conventional ICore station output modules, not all stations will be available for decoder addressing. The station numbers for slots with ICM-600 modules will not be available for decoder station programming.

Voltage measurement between an active decoder and the solenoid is not a reliable indicator of the output from a decoder.

- Decoder electrical power is not the same as 50/60 Hz power and normal voltmeters may show very low readings to active stations (may range from 5 to 14 Volts).
- It is more reliable to keep a known-good decoder, and a known-good solenoid, for troubleshooting purposes.

Controller may temporarily fault Open if only one decoder is connected to the two-wire path, since standby current may fluctuate below the minimum. Correct by either waiting 5 minutes for line to stabilize, or connecting a second decoder.

Stations turned on in the field with ICD-HP may shut down prematurely, because the controller is unaware of the decoder activation. To prevent this, start another station via the controller or remote control anywhere in the system.

# NODE – ADVANCED FEATURES & TROUBLESHOOTING

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All advanced programming functions are initiated from the Idle Mode, which shows the time, day of the week, and battery life indicator on the display. If something is flashing on the display then the controller is in one of the programming modes. After a short period of inactivity the controller will return to Idle Mode.

## Sensor Bypass

1. From the Idle Mode, press and hold the  button until the  icon is displayed.
2. The display will show the umbrella icon flashing and **On**.



3. Press the  button to bypass the sensor. The display will show  and **Off** indicating the weather sensor is bypassed. The  icon will show on the display during normal operation, indicating the controller is in bypass mode.



4. To reactivate the weather sensor press and hold the  button until the  icon is displayed. Press the  button to return to normal sensor mode.

## Easy Retrieve Memory

This function allows the user to save a preferred program to permanent memory in the controller, to be restored at any time. This is a great way to override changes made, and revert back to the original programming schedule .

To save a program:

1. Make sure that the controller is programmed with the preferred programming schedule.
2. From the Idle Mode, press and hold the  and  button for 5 seconds to save the current program.
3. The screen will show 3 dashed lines moving from left to right indicating that the current program is being saved to permanent memory. The display will flash **Done** when the process is complete.



To retrieve a saved program:

1. From the Idle Mode, press and hold the  and  button for 5 seconds.
2. The screen will show 3 dashed lines moving from right to left indicating that the preferred program is being retrieved from memory.

The controller now has the preferred program as the current program. The display will flash **Done** when the process is complete.

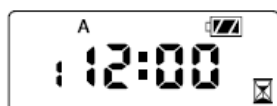


**NOTE:** Be careful when using Easy Retrieve memory. Saving program data to memory using Easy Retrieve will take the current program information and override whatever is saved in permanent memory. When saving program data make sure that the current program data is what you want saved.

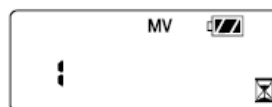
### Setting Master Valve Operation (NODE-200, NODE-400, & NODE-600 only)

The multi station NODE models (NODE-200, NODE-400, and NODE-600) are capable of being programmed with the use of a normally closed master valve. When programming with the master valve you will be assigning station 1 as the master valve, effectively losing the use of station 1 for activation of an irrigation station.

1. From the Idle Mode, press the button until the icon is displayed.
2. Program A will be displayed along with the active station # on the lower left. Make sure the active station showing is #1. The run time will be shown.



3. Press the button once and the **MV** icon will display on the screen and the time will disappear. Station 1 is now acting as the master valve and will not be available in other programming screens.



4. When the master valve is activated it will apply to all programs and the **MV** icon will stay displayed on the screen at all times.

### Programmable Off (up to 99 days)

This feature permits the user to stop all programmed watering for the designated period from 1-99 days. At the end of the programmable off period the controller will resume normal operation.

1. From the Idle Mode, press the button until the icon is displayed. Wait two seconds until **Off** is shown on the display. The controller is now in System Off mode.
2. Press the button and a 1 will be displayed blinking, indicating the number of days the controller will stay off. Program the off days as desired, up to 99 days maximum.
3. The display will show the number of days remaining in the OFF period.
4. To interrupt the OFF period press the button to return to the Idle Mode screen, showing the time of day and day of the week.

### Hunter Quick Check

This circuit diagnostic procedure can quickly identify "shorts" commonly caused by faulty solenoids or when bare common wire touches a bare station control wire. To initiate the Hunter Quick Check procedure:

1. From the Idle Mode, press and hold the , , and buttons.
2. The display will show all segments. Release the buttons.
3. Press the button to initiate the Quick Check test.
4. The controller will then activate each available station for 1 second until all stations have been activated.

## BATTERY LIFE INDICATOR

The remaining battery life can be estimated from the battery life indicator shown on the display. The NODE can operate using either a single 9-volt battery or using two 9-volt batteries. Using two nine volt batteries will yield approximately twice the battery life of a single 9-volt battery. The battery life indicator chart below shows an estimate on the remaining battery life.

- Full: 100–60% remaining battery life
- Med: 60–25% remaining battery life
- Low: 25–0% remaining battery life
- Replace battery immediately!

## RESETTING CONTROLLER

Resetting the controller will erase the current program data and restart the controller. A reset does not, however, delete a program saved to permanent memory using the Easy Retrieve Memory feature (see page 12) to save a preferred program.

1. From the Idle Mode, press and hold the , , and keys.
2. After two seconds the screen will go blank. Continue to hold the , , and keys.
3. 12:00 will flash on the display. Release the keys.
4. The controller may show a countdown from 10 to 1 on the display, and then 12:00 AM will be shown flashing when the reset is complete. The controller can now be reprogrammed.

## TROUBLESHOOTING GUIDE

ENG

| Problem                                            | Causes                                                                                                                  | Solutions                                                                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| There is no display.                               | Display is off.<br>Battery is dead.                                                                                     | Press any button for 1 second.<br>Replace the battery.                                                                                          |
| Display indicates watering but none is occurring.  | No water pressure.<br>Faulty solenoid.<br>Incompatible solenoid.                                                        | Turn on main system supply.<br>Replace solenoid.<br>Must use Hunter DC Latching Solenoid (P/N 458200) or other compatible DC latching solenoid. |
| Automatic irrigation does not start at start time. | Controller in System Off mode.<br><br>AM/PM of time of day not set correctly.<br>AM/PM of start time not set correctly. | Verify that controller is programmed for automatic watering.<br>Correct AM/PM of time of day.<br>Correct AM/PM of start time.                   |
| Rain sensor does not suspend watering.             | Rain sensor defective or miswired.                                                                                      | Verify proper operation of the rain sensor and wire connections (see page 10).                                                                  |
| Controller waters more than one time.              | The program has more than 1 start time assigned to it. Each program has up to 4 start times.                            | Eliminate program start times as needed.                                                                                                        |

## HUNTER ACC TROUBLESHOOTING

| PROBLEM                                                             | CAUSES                                                                                                                                                                                                                                                                                       | SOLUTIONS                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No display</b>                                                   | <p>Check AC power to controller</p> <p>Facepack is not firmly seated and locked, and/or 9-pin connector is not fully connected.</p> <p>Grey ribbon cable is not connected from back of inner panel to cabinet</p>                                                                            | <p>Fix power supply</p> <p>Seat facepack in connector</p> <p>Connect ribbon cable to the back of facepack door</p>                                                                                                                                                                           |
| <b>Display reads "Attention" (may be followed by sensor number)</b> | <p>ATTENTION indicates an alarm, an active sensor or trouble in the system. ATTENTION means turn the dial to Data History, select Alarm Log and find detailed messages about each individual alarm with a date and time. A complete list of alarm messages is included after this table.</p> | <p>Turn Dial to History, select Alarm Logs, and review for individual alarm events</p> <p>The controller log and station log may also be useful supporting information when diagnosing problems.</p>                                                                                         |
| <b>Station does not irrigate</b>                                    | <p>Field wiring or solenoid problem</p>                                                                                                                                                                                                                                                      | <p>Perform manual One Station start and observe display and output light</p> <p>If light red, check solenoid and field is wiring, including COM (common wires). Station outputs must not exceed 0.56A total.</p>                                                                             |
| <b>Controller does not irrigate automatically</b>                   | <p>Possible programming errors.</p> <p>Sensor shutdown</p> <p>Programmable Off in effect</p> <p>Time/Date errors</p>                                                                                                                                                                         | <p>Verify all programs Days to Water, Start Times and Station Run Times</p> <p>Check display for Fault Indication (if yes, press + for status)</p> <p>Check display for Off Days</p> <p>Verify controller Time and Date, including AM/PM/24 hour settings</p>                                |
| <b>Rain or other Click sensor does not shut down system</b>         | <p>Incorrect sensor type or connection</p> <p>Incorrect sensor settings for Program</p>                                                                                                                                                                                                      | <p>Use one normally closed Click type sensor pre sensor port (SEN1-4). Verify that one wire from each sensor is to + and one to -. Do not connect multiple sensors to a single port.</p> <p>Turn dial to Set Sensor Operation and verify correct response to each program to the sensor.</p> |

|                                                                                   |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Controller does not recognize output module (station size shown incorrect)</b> | <p>Module seated incorrectly</p> <p>Module slot skipped</p> <p>Station output module overload</p> | <p>Verify that modules are seated all the way up in wiring compartment, and module lock is ON.</p> <p>Verify that no module slots have been skipped left to right.</p> <p>Reseat Module and observe green station light flashing when module is recognized</p> <p>No station light or red light.</p> <p>Swap with known good module. Check for green light. If new module works, replace old module, if new known good module also fails to light, check gold and silver contacts for dirt, corrosion or pests.</p> |
| <b>AC fuse blows</b>                                                              | <p>Incorrect AC wiring</p> <p>Surge on AC power line</p>                                          | <p>Verify that AC connections are correct for AC supply voltage. Check for lightning damage in vicinity.</p>                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Multiple output module failures</b>                                            | <p>Lightning</p> <p>Modules not installed correctly</p> <p>Over current message</p>               | <p>Check and improve earth ground</p> <p>Insure that modules are inserted correctly with ground contact in back, and pushed all the way up- red light momentarily when module recognized.</p> <p>Too much current for station output (0.56Amp max). Divide solenoids over more station outputs.</p>                                                                                                                                                                                                                 |

## HUNTER SOLAR SYNC TROUBLESHOOTING

| PROBLEM                                                          | CAUSES                                                                                                         | SOLUTIONS                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Controller shows ERR in display</b>                           | Module wires not properly connected to controller terminal                                                     | Check the connection between module and controller                                                                                                                                                                                                                                                                                                                                            |
| <b>Solar Sync Module Shows ERR</b>                               | Connection between module and sensor faulty                                                                    | Check connection between module and sensor (green and black wires)                                                                                                                                                                                                                                                                                                                            |
| <b>Seasonal Adjustment seems low</b>                             | Region too high<br>Water Adjustment setting too low<br>Location of sensor does not allow for full sun          | Make sure controller dial is in the RUN position. Increase the values of the water adjustment scale. If you max the water adjustment scale at 10 and still require more adjustment move down one region. Solar Sync will immediately update the Seasonal Adjust on the controller. Repeat until desired seasonal adjust is showing on the controller.                                         |
| <b>Seasonal Adjustment seems high</b>                            | Region too low<br>Water Adjustment setting too high                                                            | Make sure controller dial is in the RUN position. Decrease value of the water adjustment setting. If you decrease the water adjustment feature to one and still require further adjustment, decrease the region. Solar Sync will immediately update the Seasonal Adjust on the controller. If it is still too high, repeat the adjustment until the desired seasonal adjust has been reached. |
| <b>Rain or Freeze Shutoff not activating</b>                     | Rain sensor bypass switch on controller set to "Bypass"<br><br>Jumper clip still on controller wiring terminal | Set controller bypass switch to "Active"<br><br>Remove clip                                                                                                                                                                                                                                                                                                                                   |
| <b>Run times for a particular station are too short/too long</b> | Program Run time too short/too long                                                                            | Solar Sync provides a global seasonal adjustment to the controller. If a particular station has run times too long or too short, make the appropriate adjustment to the program in the controller.                                                                                                                                                                                            |

# CALIBRATION/ SET UP

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After Solar Sync has been installed and programmed, it is recommended to allow the system to run for a few days at the initial setting. Because of the variety in site conditions (including sensor location, amount of direct sunlight available to the sensor, reflective heat from surrounding structures, etc), the initial setting may require adjustment in order to arrive at the desired performance. The calibration of the Solar Sync to a particular site can easily be accomplished by adjusting the Region and/or Water Adjustment settings.

Install Solar Sync sensor and program the module (as described in pages 10 –12).

Allow system to operate at initial settings for a minimum of 3 days.

Observe the Seasonal Adjust on the controller. If the Seasonal Adjust amount appears to be lower or higher than expected for that time of year, the Solar Sync settings need to be adjusted.

**Seasonal Adjust too low** – Make sure controller dial is in the “Run” position. Increase the value on the Water Adjustment scale (10 is max). Once the setting is changed, the controller will immediately be updated with the new Seasonal Adjust %. Increase the Water Adjustment setting until the desired Seasonal Adjust % is shown. If you max out the Water Adjustment scale at 10 and still require more Seasonal Adjust, move down to the next lower Region (from Region 4 to 3, for example).

**Seasonal Adjust too high** – Make sure controller dial is in the “Run” position. Decrease the value on the Water Adjustment scale (default setting is 5). Once the setting is changed, the controller will immediately be updated with the new Seasonal Adjust %. Decrease the Water Adjustment setting until the desired Seasonal Adjust % is shown. If you minimize the Water Adjustment scale down to 1 and still require a reduction in Seasonal Adjust, move up the next Region (from Region 2 to 3, for example).

**Station Run Times** – It is important to understand that Solar Sync provides a global seasonal adjustment to the controller. This means that all station run times will be modified by the seasonal adjust percentage shown. When programming the controller, the run times should be entered that represent peak season watering schedules. If the Solar Sync is adjusting to the appropriate seasonal adjust value but the run time for a particular station appears to be too long/short, adjust the station run time in the controller program.

## SOLAR SYNC Application Chart

| Solar Sync Model                                                |  X-CORE<br>SOLAR SYNC SEN                                                                |  Pro-C/PCC<br>SOLAR SYNC    |  ICC<br>SOLAR SYNC           |  I-CORE<br>SOLAR SYNC                       |  ACC<br>SOLAR SYNC SEN                                                                                                                                            |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Seasonal Adjustment</b>                                      |                                                                                                                                                                             |                                                                                                                |                                                                                                                |                                                                                                                              |                                                                                                                                                                                                                                                    |
| Seasonal Adjustment Increment                                   | Global<br>(applies to all programs)<br>10%<br>Yes<br>(will be overridden by Solar Sync adjustment at midnight)                                                              | Global<br>(applies to all programs)<br>10%<br>Yes<br>(will be overridden by Solar Sync adjustment at midnight) | Global<br>(applies to all programs)<br>10%<br>Yes<br>(will be overridden by Solar Sync adjustment at midnight) | Selectable by Program<br>10%<br>Yes<br>(If Program is in Global seasonal adjustment mode)                                    | Selectable by Program<br>1%<br>Yes<br>(If Program is in Global seasonal adjustment mode)                                                                                                                                                           |
| Manual Modification of Seasonal Adjust value                    | 100%                                                                                                                                                                        | 80%                                                                                                            | 80%                                                                                                            | 80%                                                                                                                          | 80%                                                                                                                                                                                                                                                |
| Default Seasonal Adjust Value (at first midnight after install) |                                                                                                                                                                             |                                                                                                                |                                                                                                                |                                                                                                                              |                                                                                                                                                                                                                                                    |
| <b>Features</b>                                                 |                                                                                                                                                                             |                                                                                                                |                                                                                                                |                                                                                                                              |                                                                                                                                                                                                                                                    |
| Automatic daily seasonal adjustment updates                     | •                                                                                                                                                                           | •                                                                                                              | •                                                                                                              | •                                                                                                                            | •                                                                                                                                                                                                                                                  |
| Rain-Click Sensor (Shut down during rain events)                | •                                                                                                                                                                           | •                                                                                                              | •                                                                                                              | •                                                                                                                            | •                                                                                                                                                                                                                                                  |
| Freeze-Click Sensor (Shut down below 37°F)                      | •                                                                                                                                                                           | •                                                                                                              | •                                                                                                              | •                                                                                                                            | •                                                                                                                                                                                                                                                  |
| No Water Window                                                 |                                                                                                                                                                             |                                                                                                                |                                                                                                                |                                                                                                                              |                                                                                                                                                                                                                                                    |
| <b>Notes</b>                                                    | Solar Sync Sensor connects directly to "SEN" terminals on controller<br><br>Requires "installing/uninstalling" Sensor to controller (see X-Core owner's manual for details) | Solar Sync Module can be mounted inside PCC cabinet<br><br>Compatible with all versions of Pro-C and PCC       | Solar Sync Module can be mounted inside the ICC on back of facepack.                                           | Solar Sync adjustment can be selected by program, along with Global (Manual) adjustment or Seasonal Adjust by Month (Manual) | ACC logs up to 250 daily adjustments in Controller Log (includes Before and After settings)<br><br>SOLAR SYNC SEN connects directly to "ET" terminals. Requires Master Module (572000) ver. 5 or later, and ACC facepack firmware ver. 5 or later. |
| <b>Troubleshooting and Diagnostics</b>                          | "No 55" displayed if communication with Solar Sync Sensor is lost                                                                                                           | "ERR" displayed on Solar Sync Module when communication with Solar Sync Sensor is lost                         | "ERR" displayed on Solar Sync Module when communication with Solar Sync Sensor is lost                         | "ERR" displayed on Solar Sync Module when communication with Solar Sync Sensor is lost                                       | "Sensor Fail" displayed when communications is lost or Sync Sensor Test from ET Functions menu                                                                                                                                                     |



## Hunter Controller Quick Reference Guide

|                                       | X-Core     | SRC     | Pro-C      | ICC        | I-Core    | ACC       | SVC     | WVC     | XC Hybrid   |
|---------------------------------------|------------|---------|------------|------------|-----------|-----------|---------|---------|-------------|
| <b>Primary Application</b>            |            |         |            |            |           |           |         |         |             |
| Residential                           | •          | •       | •          |            |           |           | •       | •       | •           |
| Light Commercial                      |            |         | •          | •          | •         |           | •       | •       | •           |
| Commercial/Industrial                 |            |         |            |            |           | •         | •       | •       |             |
| <b>Type</b>                           |            |         |            |            |           |           |         |         |             |
| Indoor                                | •          | •       | •          |            |           |           |         |         |             |
| Outdoor                               | •          |         | •          | •          | •         | •         | •       | •       |             |
| Modular                               |            |         | •          | •          | •         | •         |         |         |             |
| Battery Operated                      |            |         |            |            |           |           | •       | •       | •           |
| <b>Features</b>                       |            |         |            |            |           |           |         |         |             |
| Number of Stations                    | 2,4,6,8    | 6,9     | 3 to 15    | 8 to 48    | 8 to 42   | 12 to 99  | 1, 2, 4 | 1, 2, 4 | 4,6,8,10,12 |
| Seasonal Adjustment (Global)          | 10% - 150% |         | 10% - 300% | 10% - 150% | 0% - 300% | 0% - 300% |         |         | 10% - 150%  |
| Seasonal Adjustment (Monthly)         |            |         |            |            | •         |           |         |         |             |
| Non-Volatile Memory                   | •          | •       | •          | •          | •         | •         | •       | •       | •           |
| Easy-Retrieve Memory                  | •          |         | •          |            | •         | •         |         |         | •           |
| Weather Sensor Compatible             | •          | •       | •          | •          | •         | •         | •       | •       | •           |
| Pump/Master Valve                     | •          | •       | •          | •          | •         | 2         |         |         | •           |
| One Touch Manual Start                | •          | •       | •          | •          | •         | •         | •       | •       | •           |
| Manual Cycle                          | •          | •       | •          | •          | •         | •         | •       | •       | •           |
| Total Run Time Calculator             |            |         | •          |            | •         | •         |         |         |             |
| Test Program                          | •          |         | •          | •          | •         | •         |         |         | •           |
| Delay Between Stations (up to)        | 4 hrs      |         | 4 hrs      | 10 hrs     | 9 hrs     | 6 hrs     |         |         | •           |
| Dual Voltage Transformer (120/230VAC) |            |         |            | •          | •         | •         |         |         |             |
| Simultaneous Station Operation        |            |         |            | •          | •         | •         |         | •       |             |
| Hunter Quick Check™                   | •          | •       | •          | •          | •         | •         |         |         |             |
| Automatic Short Circuit Protection    | •          | •       | •          | •          | •         | •         |         |         |             |
| Rain Sensor Bypass                    | •          | •       | •          | •          | •         |           |         |         | •           |
| Sensor Programmable by Zone           |            |         | •          |            | •         |           |         |         |             |
| Sensor Inputs                         | 1          | 1       | 1          | 1          | 3         | 4         | 1       | 1       | 1           |
| Flow Monitoring                       |            |         |            |            | •         | •         |         |         |             |
| Multiple Language Programming         |            |         |            |            | •         |           |         |         |             |
| Backlit Display                       |            |         |            |            | •         | •         |         |         |             |
| Low Battery Indicator                 |            |         |            |            |           |           | •       | •       |             |
| Waterproof (to 12 ft.)                |            |         |            |            |           |           | •       | •       |             |
| Wireless Remote Programming           |            |         |            |            |           |           |         | •       |             |
| <b>Programming</b>                    |            |         |            |            |           |           |         |         |             |
| Independent Programs                  | 3          | 3       | 3          | 4          | 4         | 6         | station | station | 3           |
| Overlap Programs                      |            |         |            |            | 2         | 6         |         |         |             |
| Max Station Run Times                 | 4 hrs      | 99 min. | 6 hrs      | 12 hrs     | 12 hrs    | 6 hrs.    | 4 hrs.  | 4 hrs.  | 4 hrs.      |
| Start Times per Program               | 4          | 4       | 4          | 8          | 8/16(D)   | 10        | 9       | 9       | 4           |
| 365 Day Calendar                      | •          | •       | •          | •          | •         | •         |         |         | •           |
| Odd/Even Watering                     | •          | •       | •          | •          | •         | •         |         |         | •           |
| Interval Watering (up to 31 days)     | •          |         | •          | •          | •         | •         | •       | •       | •           |
| Event Day Off                         |            |         | •          |            | •         |           |         |         |             |
| No Water Window                       |            |         |            |            | •         | •         |         |         |             |
| Cycle and Soak                        |            |         |            | •          | •         | •         |         |         |             |
| Programmable Rain Delay               | •          |         | •          | •          | •         | •         | •       | •       | •           |
| <b>Cabinet</b>                        |            |         |            |            |           |           |         |         |             |
| Plastic - Indoor                      | •          | •       | •          |            |           |           |         |         |             |
| Plastic - Outdoor                     | •          |         | •          | •          | •         |           | •       | •       | •           |
| Powder Coated Metal - Outdoor         |            |         |            | •          | •         | •         |         |         |             |
| Powdered Coated Pedestal (optional)   |            |         |            | •          | •         | •         |         |         |             |
| Stainless Steel - Outdoor             |            |         |            | •          |           |           |         |         | •           |
| Stainless Steel Pedestal (optional)   |            |         |            | •          |           |           |         |         |             |
| Plastic Pedestal                      |            |         |            | •          | •         | •         |         |         |             |
| <b>Accessories</b>                    |            |         |            |            |           |           |         |         |             |
| Remote Controls (Roam & ICR Remotes)  | •          | •       | •          | •          | •         | •         |         |         |             |
| Compatible with IMMS™ Central         |            | •       | •          | •          | •         | •         |         |         |             |
| Hunter Klik™ Sensors                  | •          | •       | •          | •          | •         | •         | •       | •       | •           |
| Compatible with Solar Sync            | •          |         | •          | •          | •         | •         |         |         |             |
| Compatible with Hunter ET System      |            | •       | •          | •          |           | IMMS-ET   |         |         |             |