

# Nightscaping®

## Powercenter™ Troubleshooting Guide



# **TROUBLESHOOTING MODULAR POWERCENTERS**

## INDEX:

Necessary troubleshooting items.....	2
General troubleshooting procedures.....	2
SS module troubleshooting instructions.....	4
AT (analog timer) module troubleshooting instructions.....	5
AP (analog timer/photocell) module troubleshooting instructions.....	6
DT (digital timer) module troubleshooting instructions.....	7
DP (digital timer/photocell) module troubleshooting instructions.....	8
PC (photocell) module troubleshooting instructions.....	9
SC (sprinkler control) module troubleshooting instructions.....	10
12V (Islander relay) module troubleshooting instructions.....	11
XO (X-10) module troubleshooting instructions.....	12
IQ-140 (IQ-140) module troubleshooting instructions.....	13
IQ-150 (IQ-150) module troubleshooting instructions.....	14

## **TROUBLESHOOTING MODULAR POWERCENTERS**

The following items are necessary for troubleshooting a modular powercenter:

- Voltmeter that indicates 120 and 12 volts AC (A volt meter is more reliable than a test light).
- Additional fustats of the same size as the fustats in the powercenter, or a fustat tester.
- Flat screwdriver.
- Phillips screwdriver.
- Needle-nose pliers.

### **General troubleshooting procedure:**

1. Test outlet powercenter is plugged into for 120 volt AC power.
2. Remove ALL low voltage cables from the low voltage terminal blocks.
3. Insert new fustat(s) of the same size and type, or use fustat tester. Make sure fustat(s) is snug in the fustat holder (hand tighten only).
4. Check the following items before testing:
  - Black 4 position switch is in the HI, MED, or LO position...not all the way to the right in the OFF position. Make sure it is securely in one of these positions. If switch sets in-between any position, it could produce a false “no power” reading.
  - Stainless steel toggle switch, if present, must be in the OFF position for normal operation.
5. After all above conditions have been met, manually flip the stainless steel toggle switch to the ON position. If stainless steel toggle switch is not present, proceed to #7.
6. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter. Place volt meter leads INSIDE the low voltage terminal blocks where the low voltage cables install. DO NOT test on top of the screws of the low voltage terminal blocks, a screw that is not tightened down may produce a false “no power” reading.
  - If power, proceed to #7.
  - If no power, repeat the above process 2-3 more times until it is determined that there is absolutely no power at the low voltage terminal blocks.
7. Follow troubleshooting instructions for specific module installed in powercenter:
  - SS Manual powercenter (page 4)
  - AT Analog timer (page 5)
  - AP Analog timer with photocell (page 6)
  - DT Digital timer (page 7)
  - DP Digital timer with photocell (page 8)
  - PC Photocell only (page 10)
  - SC Sprinkler control module (page 11)
  - 12V Islander relay module (page 12)
  - XO X-10 module (page 13)
  - IQ140 IQ-140 module (page 14)
  - IQ150 IQ-150 module (page 15)

Test each set of low voltage terminal blocks for 12 volt AC power using volt meter. Place volt meter leads INSIDE the low voltage terminal blocks where the low voltage cables install. DO NOT test on top of the screws of the low voltage terminal blocks, a screw that is not tightened down may produce a false “no power” reading.

-If power after troubleshooting module, powercenter and module have been determined to be working properly. Re-connect low voltage cables, system is working properly.

-If no power after troubleshooting module, proceed to #8.

8. UNPLUG POWERCENTER FROM POWER SOURCE! Remove screws holding module in place and pull module out from module compartment, but DO NOT remove module wiring. Make sure module is properly wired to powercenter.

-If improperly wired, re-wire per specific module wiring diagram and repeat step #7.

-If still no power, proceed to #9.

-If power, powercenter and module have been determined to be working properly. Re-connect low voltage cables, re-install module into module compartment, system is working properly.

-If wired properly, repeat step 7 a few times until it is determined that there is absolutely no power at the low voltage terminal blocks. If still no power, proceed to #9.

9. MAKE SURE POWERCENTER IS UNPLUGGED FROM POWER SOURCE!

Remove module completely, including wiring, from the module compartment. Make sure there are NO wires connected to any of the 120 volt terminals of the powercenter inside the module compartment.

10. If stainless steel toggle switch is present, Cover module compartment and plug powercenter in. Turn toggle switch to ON position. If stainless steel toggle switch is not present, UNPLUG POWERCENTER FROM POWER SOURCE! Use one wire from the module (with spade lugs on BOTH ends) to jump between 120 volt powercenter terminal #1 and 120 volt powercenter terminal #2. Cover module compartment and plug powercenter in. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.

-If power, powercenter is working properly, module is bad. Replace module. DO NOT REPLACE ENTIRE POWERCENTER, REPLACE MODULE ONLY.

-If still no power, repeat steps 9 & 10 until it is determined that there is absolutely no power at the low voltage terminal blocks. If repeat processes produce no power and all above steps and conditions are met, powercenter may be bad. Call factory for service.

### **SS module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. If stainless steel toggle switch is present, plug powercenter in. Turn toggle switch to ON position. If stainless steel toggle switch is not present, UNPLUG POWERCENTER FROM POWER SOURCE! Remove module compartment cover. Use one wire from the module (with spade lugs on BOTH ends) to jump between 120 volt powercenter terminal #1 and 120 volt powercenter terminal #2. Cover module compartment and plug powercenter in. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.

-If power, powercenter is working properly.

-If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks. If repeat processes produce no power and all above steps and conditions are met, powercenter may be bad. Call factory for service.

## **AT (analog timer) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Set timer pins properly:
  - For analog timer with red pins, ALL pins for the period the lights are to remain ON must be pulled UP, in a SERIES, away from the face of the clock.
  - For analog timer with green and red pins, green pin is the ON position, red pin is the OFF position.
2. Spin analog timer clockwise until ON pin(s) “click” past the black knob on the upper left of the analog timer. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.
  - If power, powercenter and module are working properly.
  - If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks.
3. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place, (see SS module troubleshooting instructions) module is bad. Replace the analog timer module ONLY. DO NOT replace the entire powercenter.  
\*\*\*Note: Identify the time of day on the analog timer before troubleshooting to determine if the analog timer is spinning properly and keeping proper time. Once it has been determined that the powercenter is functional and the analog timer will produce power when spun manually, it is possible that the analog timer may not be keeping proper time. It may be necessary to check the analog timer frequently over a 2-3 day period to see if it is keeping proper time. If the analog timer is NOT keeping proper time, replace the analog timer module ONLY. DO NOT replace the entire powercenter. A properly functioning powercenter does not affect the analog timer’s ability to keep proper time.

## **AP (analog timer with photocell) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Set timer pins properly:

-For analog timer with red pins, ALL pins for the period the lights are to remain ON must be pulled UP, in a SERIES, away from the face of the clock.

-For analog timer with green and red pins, green pin is the ON position, red pin is the OFF position.

2. Cover photocell with black electrical tape to simulate darkness.

\*\*\*Note: Covering the photocell with black electrical tape WILL NOT disable the photocell.

3. Spin analog timer clockwise until ON pin(s) "click" past the black knob on the upper left of the analog timer. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.

Note: It may take as long as 10 minutes for the photocell to adjust and turn the system on.

-If power, powercenter and module are working properly.

-If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks.

4. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace the analog timer/photocell module ONLY. DO NOT replace the entire powercenter.

\*\*\*Note: Identify the time of day on the analog timer before troubleshooting to determine if the analog timer is spinning properly and keeping proper time. Once it has been determined that the powercenter is functional and the analog timer will produce power when spun manually, it is possible that the analog timer may not be keeping proper time. It may be necessary to check the analog timer frequently over a 2-3 day period to see if it is keeping proper time. If the analog timer is NOT keeping proper time, replace the analog timer module ONLY. DO NOT replace the entire powercenter. A properly functioning powercenter does not affect the analog timer's ability to keep proper time.

\*\*\*Note: To test the photocell or analog timer individually, UNPLUG POWERCENTER FROM POWER SOURCE! Install photocell or analog timer individually into the powercenter module compartment per respective module wiring diagrams, cover module compartment and plug powercenter in, then follow the troubleshooting instructions for that module.

## **DT (digital timer) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Set timer properly per digital timer instructions.
2. Press digital timer manual ON button. Test each set of low voltage terminal blocks for 12 volt power using volt meter.
  - If power, powercenter is working properly.
  - If no power, proceed to #3.
3. Set a dummy program on the digital timer to turn ON within a few minutes. Set the program to turn OFF after 5 minutes. Once digital timer has turned ON, test each set of low voltage terminal blocks for 12 volt AC power using volt meter.
  - If power, powercenter and module are working properly.
  - If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks.
4. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the digital timer module. DO NOT replace the entire powercenter.
  - \*\*\*Note: Digital timer may produce power when activated either manually or automatically, but not both. It is important to test both manual and automatic function. If one works but not the other, then powercenter is functional but the digital timer module is not. Replace ONLY the digital timer module. DO NOT replace the entire powercenter.
  - \*\*\*Note: Identify the time of day on the digital timer before troubleshooting to determine if the digital timer is keeping proper time. Once it has been determined that the powercenter is functional and the digital timer will produce power when operated both manually and automatically, it is possible that the digital timer may not be keeping proper time. It may be necessary to check the digital timer frequently over a 2-3 day period to see if it is keeping proper time. If the digital timer is NOT keeping proper time, replace the digital timer module ONLY. DO NOT replace the entire powercenter. A properly functioning powercenter does not affect the digital timer's ability to keep proper time.
  - \*\*\*Note: If the digital timer has no display, it may or may not function properly, however, it is un-programmable. Replace the digital timer module ONLY. DO NOT replace the entire powercenter.

## **DP (digital timer with photocell) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Set timer properly per digital timer instructions.
2. Cover photocell with black electrical tape to simulate darkness.  
\*\*\*Note: Covering the photocell with black electrical tape WILL NOT disable the photocell.
3. Press digital timer manual ON button. Test each set of low voltage terminal blocks for 12 volt power using volt meter.

Note: It may take as long as 10 minutes for the photocell to adjust and turn the system on.

-If power, powercenter is working properly.

-If no power, proceed to #3.

4. Set a dummy program on the digital timer to turn ON within a few minutes. Set the program to turn OFF after 5 minutes. Once digital timer has turned ON, test each set of low voltage terminal blocks for 12 volt AC power using volt meter.

-If power, powercenter and module are working properly.

-If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks.

5. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the digital timer/photocell module. DO NOT replace the entire powercenter.

\*\*\*Note: Digital timer may produce power when activated either manually or automatically, but not both. It is important to test both manual and automatic function. If one works but not the other, then powercenter is functional but the digital timer module is not. Replace ONLY the digital timer module. DO NOT replace the entire powercenter.

\*\*\*Note: Identify the time of day on the digital timer before troubleshooting to determine if the digital timer is keeping proper time. Once it has been determined that the powercenter is functional and the digital timer will produce power when operated both manually and automatically, it is possible that the digital timer may not be keeping proper time. It may be necessary to check the digital timer frequently over a 2-3 day period to see if it is keeping proper time. If the digital timer is NOT keeping proper time, replace the digital timer module ONLY. DO NOT replace the entire powercenter. A properly functioning powercenter does not affect the digital timer's ability to keep proper time.

\*\*\*Note: To test the photocell or digital timer individually, UNPLUG POWERCENTER FROM POWER SOURCE! Install photocell or digital timer individually into the powercenter module compartment per respective module wiring diagrams, cover module compartment and plug powercenter in, then follow the troubleshooting instructions for that module.

\*\*\*Note: If the digital timer has no display, it may or may not function properly, however, it is un-programmable. Replace the digital timer module ONLY. DO NOT replace the entire powercenter.

## **PC (photocell) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Cover photocell with black electrical tape to simulate darkness.

\*\*\*Note: Covering the photocell with black electrical tape WILL NOT disable the photocell.

2. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.

Note: It may take as long as 10 minutes for the photocell to adjust and turn the system on.

-If power, powercenter and module are working properly.

-If no power, repeat above process 2-3 times until it is determined that there is absolutely no power at the low voltage terminal blocks.

3. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the photocell module. DO NOT replace the entire powercenter.

## **SC (sprinkler control) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Make sure 24 volt AC power supply wires from the irrigation controller are properly hooked up to the sprinkler control module.
2. Turn ON the zone of irrigation controller that supplies 24 volt AC power to the sprinkler control module.
3. Test each set of low voltage terminal blocks for 12 volt AC power using volt meter.
  - If power, powercenter and module are working properly.
  - If no power, proceed to #4.
4. Test the 24 volt AC power supply wires at the terminal lugs of the sprinkler control module.
  - If power, but no power at low voltage terminal blocks, repeat step #8, 9 & 10 of general troubleshooting procedure to determine if powercenter is functioning. If powercenter is functioning, yet still no power at low voltage terminal blocks, module is bad.
  - If no power, troubleshoot 24 volt irrigation controller & 24 volt AC power supply wires from the irrigation controller.
5. If repeat processes produce no power and all above steps and general troubleshooting conditions are met and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the sprinkler control module. DO NOT replace the entire powercenter.

## **12V (Islander relay) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Make sure 12 volt AC power supply wires from the control powercenter are properly hooked up to the Islander relay module and the low voltage terminals of the control powercenter.
2. Make sure the control powercenter has 12 volt AC power at the low voltage terminal blocks.
3. Turn ON the control powercenter.
4. Test each set of low voltage terminal blocks on the relay powercenter for 12 volt AC power using volt meter.
  - If power, powercenter and module are working properly.
  - If no power, proceed to #5.
5. Test the 12 volt AC power supply wires at the terminal lugs of the Islander relay module.
  - If power, but no power at low voltage terminal blocks, repeat step #8, 9 & 10 of general troubleshooting procedure to determine if powercenter is functioning. If powercenter is functioning, yet still no power at low voltage terminal blocks, module is bad.
  - If no power, troubleshoot control powercenter & 12 volt AC power supply wires from the control powercenter.
6. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the Islander relay module. DO NOT replace the entire powercenter.

## **XO (X-10) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Make sure code on XO module and RC-4000 or other X-10 sending unit are set properly.
  2. Press the button on the RC-4000 (or other X-10 sending unit) corresponding to the code on the XO module to turn powercenter ON.
  3. Test each set of low voltage terminal blocks on the relay powercenter for 12 volt AC power using volt meter.
    - If power, powercenter and module are working properly.
    - If no power, proceed to #4.
  4. Repeat step #8, 9 & 10 of general troubleshooting procedure to determine if powercenter is functioning. If powercenter is functioning, yet still no power at low voltage terminal blocks, module is bad.
  5. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the XO module. DO NOT replace the entire powercenter.
- \*\*\*Note: Some 120 volt power sources do not recognize the current module wiring schematic of the XO module, thus causing it not to function. In many cases it is possible to solve this problem by reversing the 120 volt module wires on powercenter terminals #1 & #2 inside the module compartment.

### **IQ-140 (IQ-140) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Follow all IQ-140 troubleshooting instructions until it is absolutely determined that the problem lies within either the IQ-140 module or the powercenter.
  - If power, powercenter and module are working properly.
  - If no power, proceed to #2.
2. Repeat step #8, 9 & 10 of general troubleshooting procedure to determine if powercenter is functioning. If powercenter is functioning, yet still no power at low voltage terminal blocks, module is bad.
3. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the IQ-140 module. DO NOT replace the entire powercenter.

### **IQ-150 (IQ-150) module troubleshooting instructions:**

FOLLOW ALL ABOVE LISTED GENERAL TROUBLESHOOTING PROCEDURES BEFORE TROUBLESHOOTING ANY MODULE.

1. Follow all IQ-150 troubleshooting instructions until it is absolutely determined that the problem lies within either the IQ-150 module or the powercenter.
  - If power, powercenter and module are working properly.
  - If no power, proceed to #2.
2. Repeat step #8, 9 & 10 of general troubleshooting procedure to determine if powercenter is functioning. If powercenter is functioning, yet still no power at low voltage terminal blocks, module is bad.
3. If repeat processes produce no power and all above steps and general troubleshooting conditions are met, and power is derived from the powercenter WITHOUT the module in place (see SS module troubleshooting instructions), module is bad. Replace ONLY the IQ-150 module. DO NOT replace the entire powercenter.

*Nightscaping*<sup>®</sup>

1705 E. Colton Ave  
Redlands, CA 92374

**(800) 544-4840**

**(909) 794-2121**

**Fax: (909) 794-7292**

**[www.nightscaping.com](http://www.nightscaping.com)**

**[info@nightscaping.com](mailto:info@nightscaping.com)**