FLUIDRA
PRO ACADEMY

TECHNICAL TRAINING

SANITATION & LEVOLOR

TROUBLESHOOTING GUIDE

CUSTOMER OPERATIONS **CONTACT INFORMATION**

REGIONALIZED POOL PROFESSIONAL SUPPORT

Whenever you need support on any Fluidra® product, program or service, you will work with your own dedicated team of professionals. They will get to know you, your area and your business. Service has never been so personal, and so simple!

1. Call 1.800.822.7933
2. Select option for Customer and Technical Support
3. Select your language
4. Select Pool Professional
5. Enter your extension which is only for pool professionals
   It is critically important that you do NOT supply your extension to pool owners

Region	Ext.	Email Address	Customer Support Hours	Technical Support Hours
SOUTHEAST: FL, GA, SC, NC	3500	3500@fluidra.com	6AM – 3PM (PST)	5AM – 3PM (PST)
NORTH: CT, DE, OH, IA, IL, IN, KS, MA, MD, ME, MI, MO, MN, ND, NE, NH, NJ, NY, PA, RI, SD, VA, VT, WI, WV	3600	3600@fluidra.com	6AM – 3PM (PST)	5AM – 3PM (PST)
SOUTH: AL, AR, KY, LA, MS, OK, TN, TX	3700	3700@fluidra.com	7:30AM – 4:30PM (PST)	6AM – 4PM (PST)
WEST: AK, AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA, WY, and HI	3800	3800@fluidra.com	8AM – 5PM (PST)	7AM – 5PM (PST)
INTERNATIONAL	4000	4000@fluidra.com	7AM – 4PM (PST)	5AM – 2PM (PST)

TABLE OF CONTENTS

AquaPure.....4
TruClear.....6
Levolor Components.....8
Levolor Transformer Test.....11
Levolor Valve Test.....12

AQUAPURE® - PURELINK™ - FUSION SOFT TROUBLESHOOTING GUIDE

Figure A, User Interface Board (UIB)

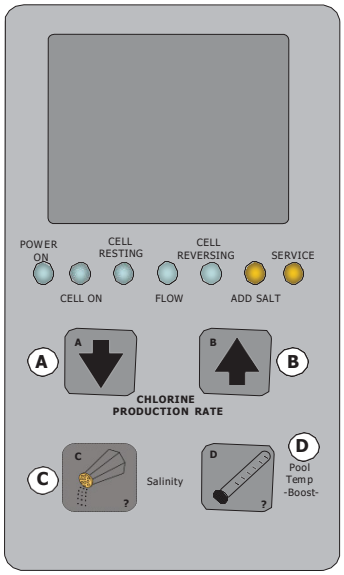
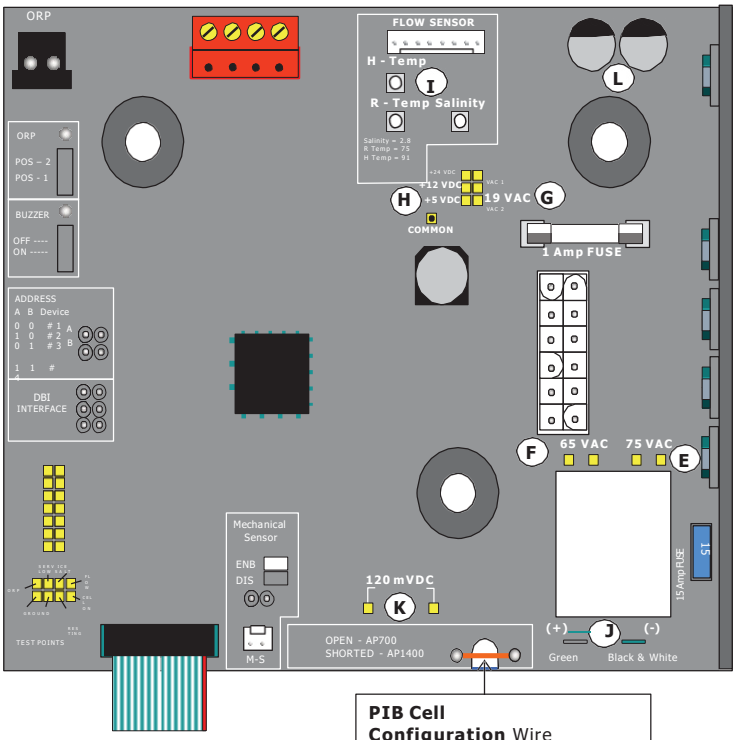


Figure B, Power Interface Board (PIB)



PIB Cell Configuration Wire
Uncut = 1400 Cell Wire
Cut = 700 Cell

Voltage and Board Testing.

Before testing, confirm that the cell & flow sensor are clean, (Use 1 part acid to 4 parts water concentration), and ensure that the salt level is 3000 – 5000 ppm. Be certain that the filter pump motor is running, and controller is NOT in Standby mode.

TRANSFORMER TEST (Set Meter to AC Voltage) Figure B

Is there 67 to 88 VAC at the 75 VAC Test Points, E, on the PIB?
- NO → Confirm incoming 120 or 240 VAC and wiring to the transformer. Replace transformer as needed.
- YES ↓

Is there 60 to 79 VAC at the 65 VAC Test Points, F , on the PIB?
- NO → Confirm incoming 120 or 240 VAC and wiring to the transformer. Replace transformer as needed.
- YES ↓

Is there 17 to 24 VAC at the 19 VAC Test Points, G , on the PIB?
- NO → Is the 1AMP fuse below 19 VAC test points good?
  - NO → Check for shorts on the PIB and wiring. Replace the fuse.
- YES ↓

Proceed to DC Voltage Test
- NO → Confirm incoming 120 or 240 VAC +/- 10% and wiring to the transformer. Replace transformer as needed.

VDC CONVERSION TEST (Set Meter to DC Voltage) Figure B

Is there 11.8 to 12.2 VDC between the common and +12 VDC test points, H , on the PIB?
- NO → Replace PIB
- YES ↓

Is there 4.8 to 5.2 VDC between the common and +5 VDC test points, H , on the PIB?
- NO → Replace PIB

FLOW/TEMP/SALINITY SENSOR & BOARD TESTING

NO FLOW

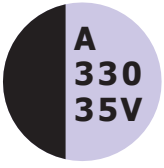
After 7 minutes, if No Flow remains on the UIB, confirm proper installation of the Tri-Sensor. If an Adapter card is installed: Use the No Flow Tri Adapter issues Section below. Otherwise, correct as needed and proceed to Board Testing.

HIGH OR LOW SALT READING ON UIB (Before proceeding, verify actual salt reading with an accurate Salt Meter). Figure A.

Calibrate the salinity on the UIB.
- Hold the salinity Button, C , down until you hear 3 beeps then release. (Approximately 15 seconds.)
- Immediately press the Temp Button, D , once and the current salinity reading will appear on the display.
- Use the Down, A , and Up, B , arrow keys to set the salinity.
- Press the Temp Button, D , to lock in the new reading. To verify if the new salinity reading is saved, press the Salinity Button, C.

UIB DISPLAY CONTINUOUSLY RESETS THE PRODUCTION PERCENTAGE AND/OR THE SALINITY READING CONTINUOUSLY NEEDS TO BE CALIBRATED Figure B.

In some cases if the Unit is powered down and up rapidly, the PIB reset to factory setting. If this occurs, check the 2 capacitors on the PIB next to the Tri-Sensor connection, L . The rating should be 330, 35 V. If the rating is different, replace the PIB.



SEE L , FIGURE B.

Continue to the next page...

AQUAPURE® - PURELINK™ - FUSION SOFT TROUBLESHOOTING GUIDE

FLOW/TEMP/SALINITY SENSOR & BOARD TESTING CONT. (Set Meter to AC Voltage) Figure B

BOARD TESTING
(Remove the Sensor and Tri Sensor Board from the PIB for these tests). Figures A & B

Salinity Reading Test. Hold the R-Temp & Salinity Buttons, I , on the PIB and the Salinity Button, C, on the UIB down. The display on the UIB should read between 2.7 and 3.2. If this number is outside this range, replace the PIB. Otherwise, proceed to Regular Temp. Reading Test.
Note: If the PIB has been calibrated, the reading may be different.

Regularly Temp. Reading Test. Hold the R-Temp & Salinity Buttons, I , on the PIB and the Temp. Button, D, on the UIB down. The display on the UIB should read between 73 and 77. If this number is outside this range, replace the PIB. Otherwise, proceed to High Temp. Reading Test.

High Temp Reading Test. Hold the H-Temp Button, I , on the PIB and the Down Arrow, A , & the Salt Button, C , on the UIB down. The display on the UIB should read between 89 and 93. If this number is outside this range, replace the PIB. Otherwise Proceed to next box.

Replacing the Tri-Sensor. After reconnecting the sensor, if the incorrect readings remain on the UIB, confirm proper installation of the Tri-Sensor & Adapter Board. (Use Tri Sensor Adapter Board Troubleshooting Guide, Sections B and C). Replace sensor as needed.

CELL & BOARD TESTING
(Set Meter to AC Voltage) Figure B

VOLTAGE TESTING
(Inspect cell, make sure that the production is set to 100% and that the current salt level is between 3000 and 3500 ppm). Figure B

Test for the proper voltage at the cell test points J, on the PIB:
Cell Serial #'s starting with A = 22 to 28 VDC
Cell Serial #'s starting with B & later = 29 to 32 VDC
Is the voltage within range?

NO → Confirm connections to the cell No are tight and not corroded. Check for water intrusion between the posts and cell body. Replace Cell and Cord if corrosion cannot be cleaned or if cord is damaged/shorted. Otherwise, replace PIB.

YES

Is there between 100 and 140 mVDC at the cell current test points, K , on the PIB?

YES → PIB is working properly, Recheck water chemistry and ensure proper salt levels.

NO → Confirm connections to the cell are tight and not corroded. Check for water intrusion between the posts and cell body. Replace Cell and Cord if corrosion cannot be cleaned or if cord is damaged/shorted. Otherwise, replace PIB.

NO CHLORINE PRODUCTION WITH NO SERVICE CODE

(Inspect cell, make sure that the production is set to 100% and that the current salt level is between 3000 and 3500 ppm). Figure B

Chemistry

- Phosphates and Nitrates can cause extremely high chlorine demands and will deplete chlorine levels to zero. Before replacing anything, confirm that these levels are close to 0 PPM.
- Cyanuric Acid (Stabilizer/Conditioner) helps protect chlorine from the harmful effects of the suns UV rays. Where required refer to your local authority having jurisdiction.

Cell Current

- Perform Cell & Board Testing

Cell Chlorine Production Test

This test will determine if chlorine is being produced in the cell.

- Set the production rate to 100% and let the unit run for 5 minutes with the 'Cell On' light lit. (Approximately 10 minutes after powering on the unit).
- While running, crack the union on the discharge side of the cell and drain some water into a clean container. Reconnect the union. Test the water for chlorine. The chlorine content should be extremely high.

SERVICE CODES
The 3-Digit codes can display individually or paired with another code. Follow the steps below for proper troubleshooting. Before testing, confirm that the Cell & Flow/Temp/Salinity Sensor are clean, and that the Salt Level is between 3000 & 3500 PPM.

Codes 120, 121, 123, or a combination of 125 & 194 = Confirm PIB Cell Configuration and Perform Cell and Board Testing

Code 124 = Remove Cord from cell while unit is powered up. After 4 minutes, if the code is 123, replace the cell and cord. If the code remains 124, replace the PIB.

Code 144, or 145 = Test the salt level with an accurate test meter and correct if needed.. Perform Flow/Temp/Salinity Sensor and Board Testing.

Code 170, or a combination of 170 & 187 =Shut off the unit, unplug the sensor, restore power. If the 170 appears replace the sensor otherwise continue to transformer and PIB testing.

Code combination of 170 & 191 = Perform Transformer Test and Cell & Board Testing

Code combination of 170 & 193 = PIB needs to be replaced

Code combination of 170 & 195 = Perform a Flow/Temp/Salinity Sensor Test

Code 171, or a combination of 171 & 189, or 171 & 190 = Perform Transformer Test and VDC Conversion Test

Code 172, or a combination of 172 & 180, 172 & 181, 172 & 183, 172 & 184, 172 & 185, or 172 & 186 = Perform a Flow/Temp/Salinity Sensor Test

Code combination of 173 & 187, or 173 & 188 = Perform a Transformer Test

Code 174, or a combination of 175 & 182 = Perform a Flow/Temp/Salinity Sensor Test

FLOW/TEMPERATURE/SALINITY SENSOR MAINTENANCE AND CLEANING:

Inspection of the sensor should take place at the same time that cell inspection happens. If the sensor is dirty or has scale, it must be cleaned.

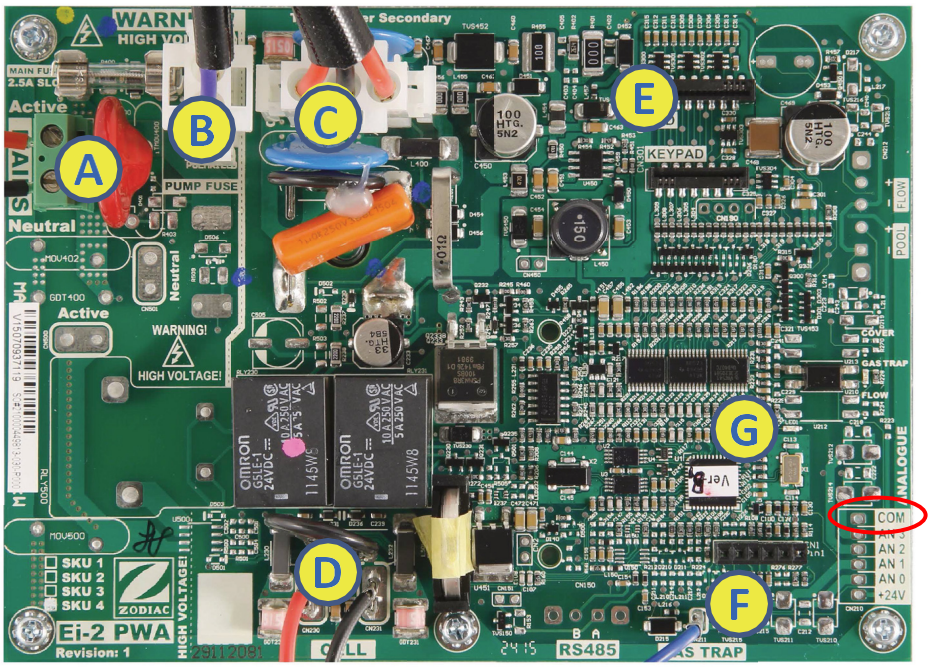
1. Remove the sensor from the cell or PVC Tee.
2. Brush with a mildly abrasive green fiber household cleaning pad. The contacts should be clean and bright.
3. Thoroughly rinse the sensor with clean tap water. Never use acid or a solution of water and acid to clean the sensor.
4. Replace sensor and resume normal operation.

CELL MAINTENANCE AND CLEANING: CAUTION

Use protective goggle and gloves during maintenance and cleaning process. Remove the cell and inspect for debris and scale formation. If there is debris or scale in the cell, it must be cleaned for proper operation.

1. Use a high-pressure jet from a garden hose to try and clean it. If this does not take care of the cell, acid cleaning is necessary.
2A. Mix 5 parts water to 1part muriatic acid into a bucket.
2B. Immerse the cell in the solution. A foaming action will begin. If foaming does not begin within 1minute, remove the cell from the solution, the cell does not need to be cleaned and proceed to step 2d. Otherwise allow the cell to remain the in the solution until foaming has stopped or 30 minutes has lapsed.
2C. Rinse the cell thoroughly with tap water and inspect. If scale is still present, follow step 2b again. (A new solution will be needed for this).
2D. Confirm the cell is clean, and re-install.

JANDY® TRUCLEAR® TROUBLESHOOTING GUIDE



Voltage and Board Testing

Before testing, confirm that the cell is clean, (Use 1 part acid to 10 parts water concentration), and ensure that the salt level is 3000 – 5000 ppm. Be certain that the filter pump motor is running, and controller is NOT in Standby mode.

INPUT VOLTAGE TEST: (Set meter to AC Voltage)

Check for 120 or 240 VAC at the power source — NO → Make certain that filter pump is on and wiring is correct

YES ↓

Check for 120 or 240 VAC between black wire and red wire at mains connector at test point A on PIB — NO → Verify 120 or 240 VAC at power source and wiring is correct Correct as needed

YES ↓

Check for 120 or 240 VAC between brown wire and blue wire at transformer primary at cn400 connector at test point B on PIB — NO → Check the fuse and replace if it is open.

TRANSFORMER: (Set meter to AC Voltage)

Check for 26 to 29 VAC between one of the red (2) wires and the black (1) wire on transformer plug at test point C on PIB (Repeat for the other red wire, both tests should read the same) — NO → Confirm incoming 120 or 240 VAC and wiring to the Transformer. Replace transformer as needed

USER INTERFACE (UI) TEST:

Check if LCD on user interface is turning on and all the buttons on the keypad are functional — NO → Check if ribbon cables are connected in correct orientation on socket (LCD and keypad) at test point E on PIB and ensure LED at G is flashing. If the UI is not turning on replace the cover

FLOW TEST (NO FLOW)

If No Flow shows on the UI LCD, Confirm proper installation of TruClear cell and the cell is full of water. Also, confirm the pump is running at 20 GPM or higher. Check for 1VDC between gas trap sensor and common (Test points F). Also, check if the flow sensor LED is flashing. Reading .3-.6 if the unit is wired with 120vac and not "converted" properly.

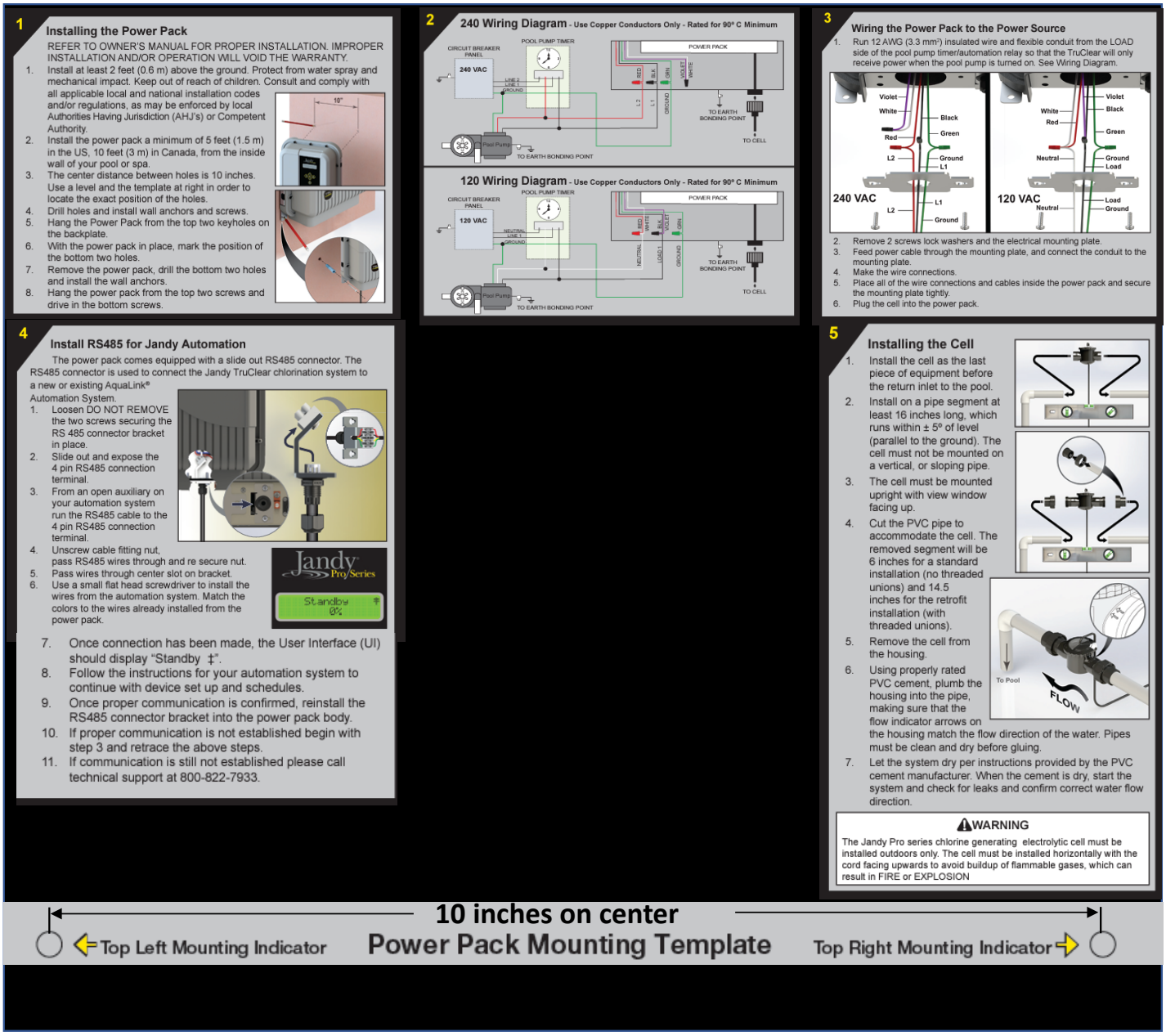
VDC CONVERSION TEST (SET METER TO DC VOLTAGE)

At 100% production check for 20 to 28 VDC between Black and Red wire at test point D on PIB — NO → Replace PIB

LOW TEMP/LOW SALT TEST

After five minutes, If Low Temp/Low Salt (LT/LS) warning shows up, check water temperature and salinity. Add salt and increase water temp if necessary and check for the reading on LCD after five minutes

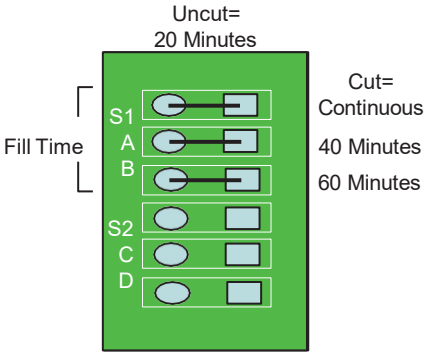
JANDY® TRUCLEAR® QUICK START GUIDE

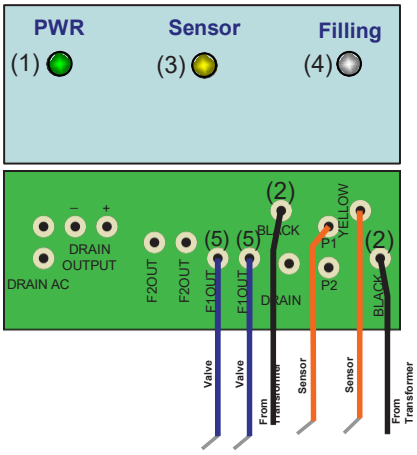


FOR YOUR SAFETY - This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist, the maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all the instructions in the installation manual can be followed exactly.

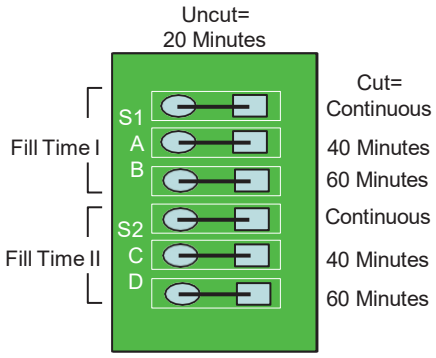
LEVOLOR® TROUBLESHOOTING GUIDE

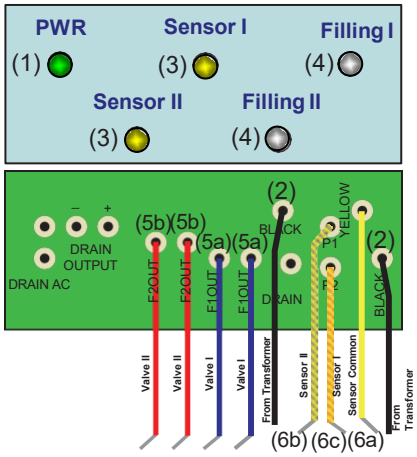
K-1100 Components

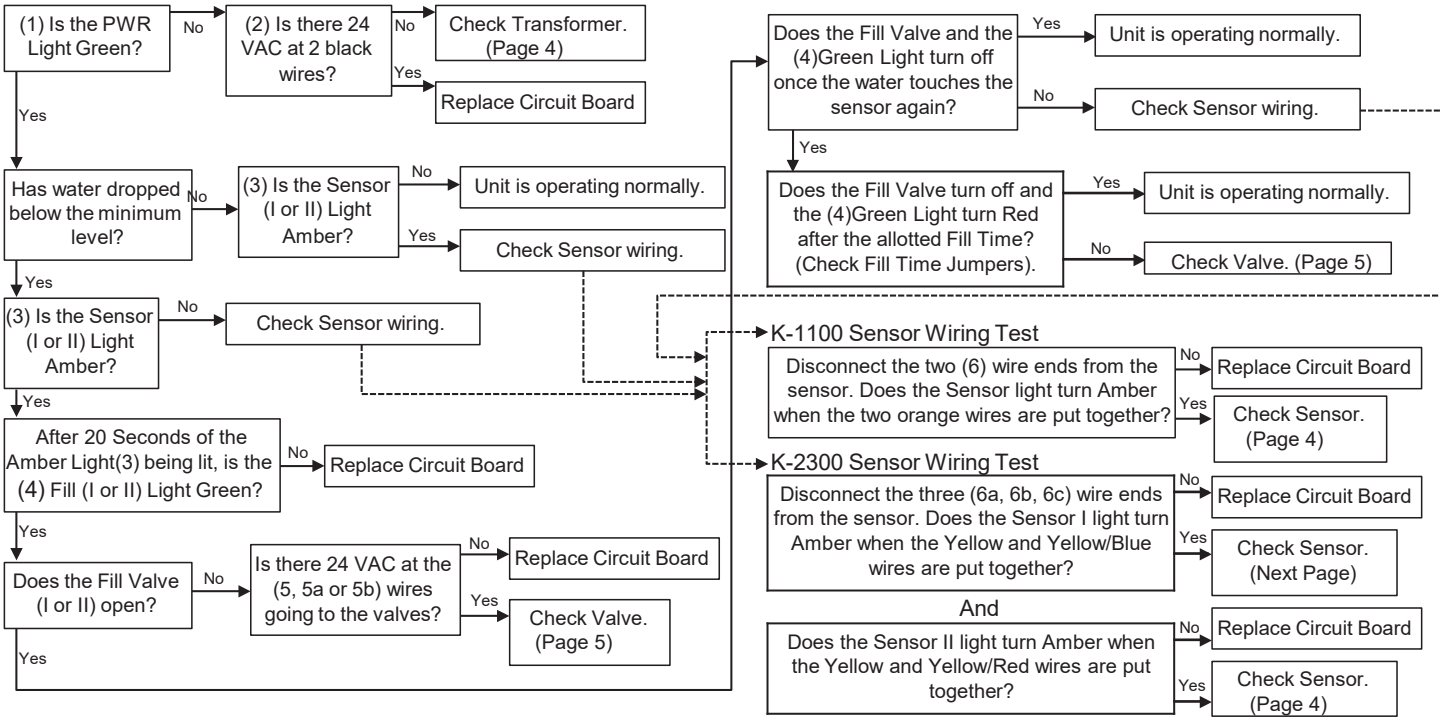




K-2300 Components

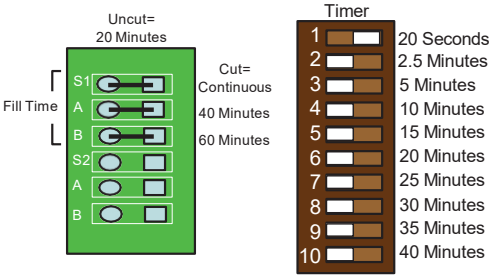


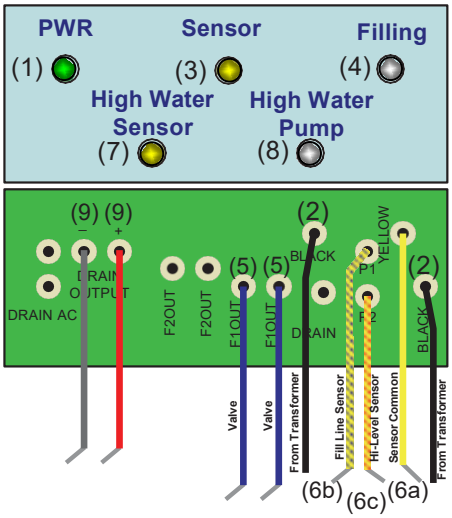




LEVOLOR® TROUBLESHOOTING GUIDE

K-2000 Components





(1) Is the PWR Light Green?
- No → (2) Is there 24 VAC at 2 black wires?
  - No → Check Transformer. (Page 4)
  - Yes → Replace Circuit Board
- Yes ↓

Has water dropped below the minimum level?
- No → (3) Is the Sensor Light Amber?
  - No → Unit is operating normally.
  - Yes → Check Sensor wiring.
- Yes ↓

Is the (3) Sensor Light Amber?
- No → Check Sensor wiring.
- Yes ↓

After 20 Seconds of the (3) Amber Light being lit, is the (4) Filling Light Green?
- No → Replace Circuit Board
- Yes ↓

Does the Fill Valve open?
- No → Is there 24 VAC at the (5) wires going to the valve?
  - No → Replace Circuit Board
  - Yes → Check Valve. (Page 5)
- Yes ↓

Does the Fill Valve and the (4) Green Light turn off once the water touches the sensor again?
- Yes → Unit is operating normally.
- No → Check Sensor wiring.
- Yes ↓

Does the Fill Valve turn off and the (4) Green Light turn Red after the allotted Fill Time? (Check Fill Time Jumpers).
- Yes → Unit is operating normally.
- No → Check Valve. (Page 5)

High Water

Has water raised in the basin to the maximum level?
- No → Is the (7)Sensor Light Amber?
  - No → Unit is operating normally.
  - Yes → Check Sensor wiring.
- Yes ↓

After 2.5 minutes of the (7) Amber Light being lit, is the (8) High Water Light Green?
- No → Replace Circuit Board
- Yes ↓

Does the Basin Pump turn on?
- No → Is there 24 VDC at the (9) wires going to the relay?
  - No → Replace Circuit Board
  - Yes → Check Relay
- Yes ↓

Does the Basin Pump and the (8) Green Light turn off after the allotted time once the water drops below the maximum level?
- Yes → Unit is operating normally.
- No → Check Sensor wiring.

K-2000 Sensor Wiring Test

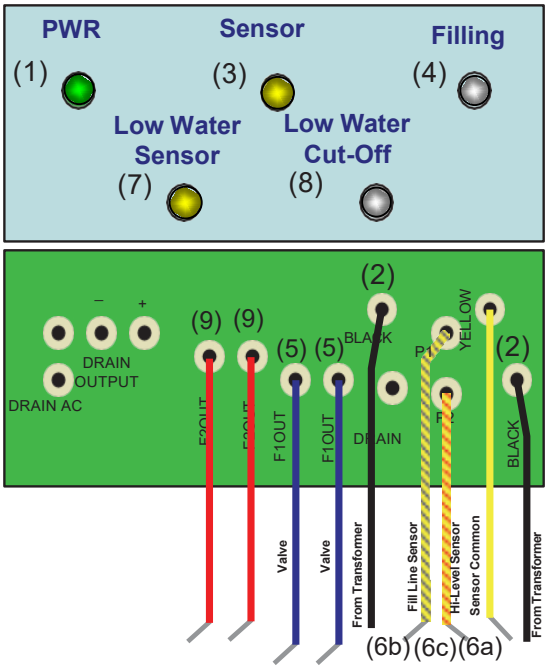
Disconnect the three (6a, 6b, 6c) wire ends from the sensor. Does the (3) Fill Light turn Amber when the Yellow and Yellow/Blue wires are put together?
- No → Replace Circuit Board
- Yes → Check Sensor. (Page 4)

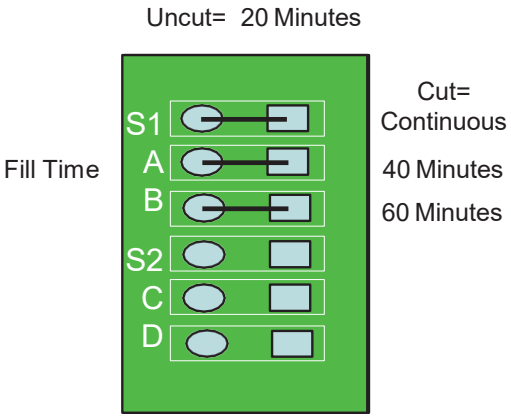
And

Does the (7) High Water Sensor light turn Amber when the Yellow and Yellow/Red wires are put together?
- No → Replace Circuit Board
- Yes → Check Sensor. (Page 4)

LEVOLOR® TROUBLESHOOTING GUIDE

K-2100 Components





FILL LINE

(1) Is the PWR Light Green? — No → (2) Is there 24 VAC at 2 black wires? — No → Check Transformer. (Page 4); Yes → Replace Circuit Board

Yes → Has water dropped below the minimum level? — No → (3) Is the Sensor Light Amber? — No → Unit is operating normally.; Yes → Check Sensor wiring.

Yes → Is the (3) Sensor Light Amber? — No → Check Sensor wiring.

Yes → After 20 Seconds of the (3) Amber Light being lit, is the (4) Filling Light Green? — No → Replace Circuit Board

Yes → Does the Fill Valve open? — No → Is there 24 VAC at the (5) wires going to the valve? — No → Replace Circuit Board; Yes → Check Valve. (Page 5)

Yes → Does the Fill Valve and the (4) Green Light turn off once the water touches the sensor again? — Yes → Unit is operating normally.; No → Check Sensor wiring.

Yes → Does the Fill Valve turn off and the (4) Green Light turn Red after the allotted Fill Time? (Check Run Time Jumpers). — Yes → Unit is operating normally.; No → Check Valve. (Page 5)

Low Water Cut-Off

Has water dropped to the minimum level? — No → Is the (7) Sensor Light Amber? — No → Unit is operating normally.; Yes → Check Sensor wiring.

Yes → After 20 Seconds of the (7) Amber Light being lit, is the (8) Low Water Cut-Off Light Green? — No → Replace Circuit Board

Yes → Does the protected item turn off? — No → Is there 24 VAC at the (9) wires going to the relay? — No → Replace Circuit Board; Yes → Check Relay

Yes → Does the protected item turn on and the (8) Green Light turn off after the 20 seconds once the water raises above the minimum level? — Yes → Unit is operating normally.; No → Check Sensor wiring.

K-2100 Sensor Wiring Test

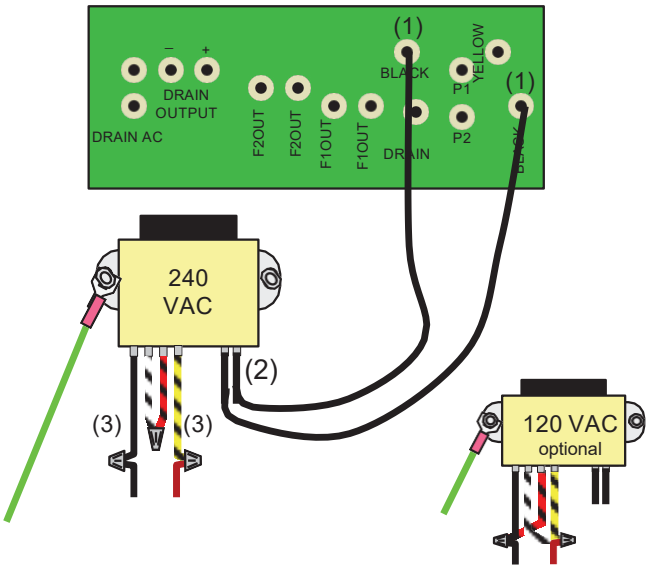
Disconnect the three (6a, 6b, 6c) wire ends from the sensor. Does the (3) Fill Light turn Amber when the Yellow and Yellow/Blue wires are put together? — No → Replace Circuit Board; Yes → Check Sensor. (Page 4)

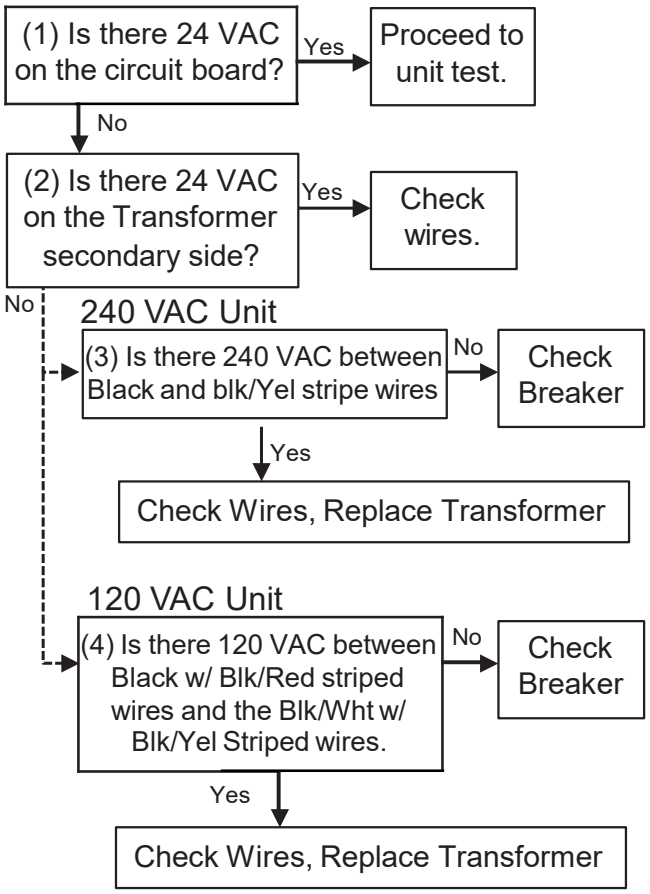
And

Does the (7) Low Water Sensor light turn Amber when the Yellow and Yellow/Red wires are put together? — No → Replace Circuit Board; Yes → Check Sensor. (Page 4)

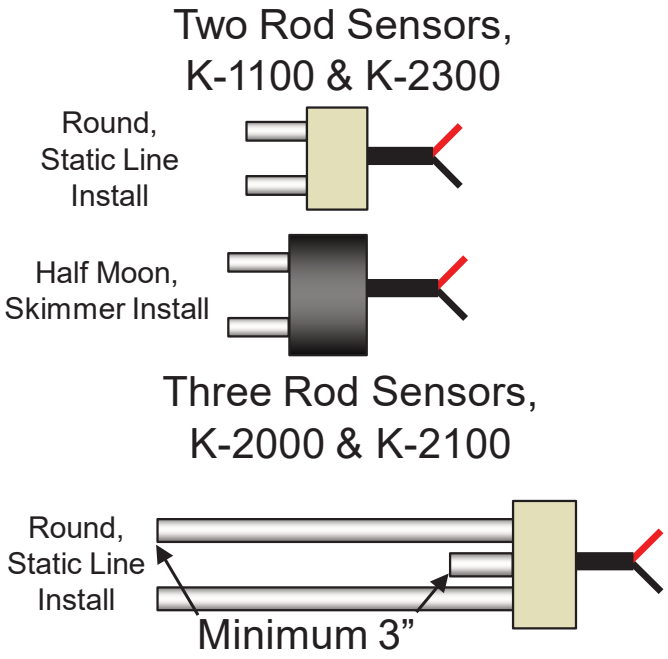
LEVOLOR® TROUBLESHOOTING GUIDE

Transformer Test



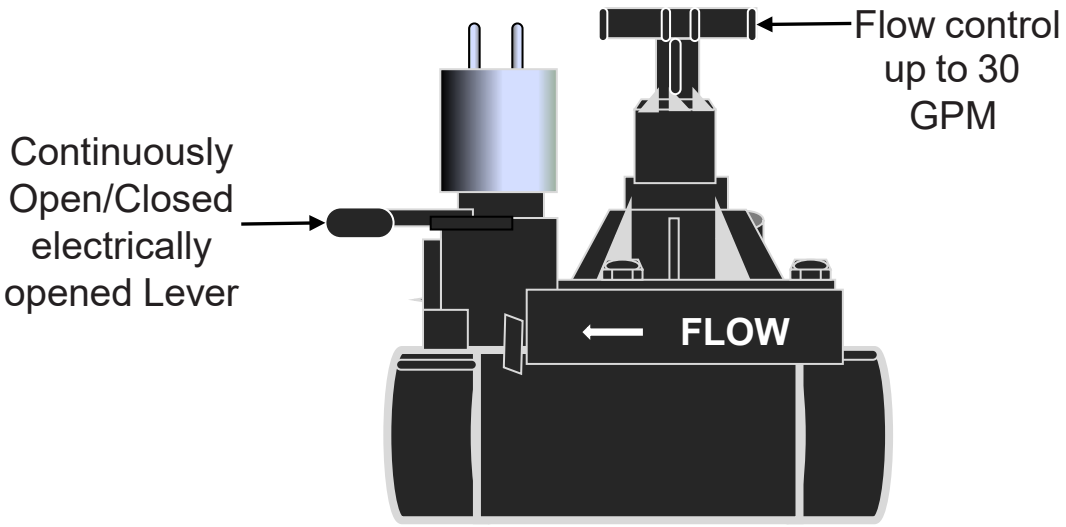


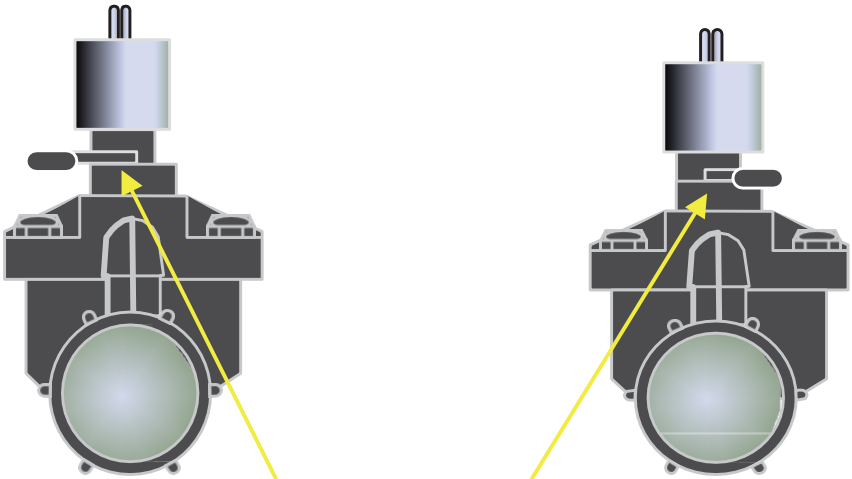
Sensor Test



1. Confirm proper wire connection to the wires in the Control Box.
2. Inspect wire for breaks, cuts, and fraying.
3. Confirm that there are no splices from the sensor head to the connection to the circuit board in the units Control Box.
4. Remove the Sensor from the static Line.
5. Visually inspect the rods for any possible debris that could create a connection between two of them. Clean as needed.
6. Visually inspect the static line for any possible debris that could create a connection between two rods. Clean as needed.
7. Confirm that there is water in the static line and that it is equalized with the corresponding body of water. Repair as needed.
8. Perform a continuity test between the wires with the sensor removed from the static line. If there is continuity, replace the sensor.
9. Reinstall the sensor and test the unit. Replace sensor as needed.

Valve Test





"OFF" Position = valve closed and opened with 24 VAC from the control box

"ON" Position = valve open for continuous flow

1. Confirm proper wire connection to the wires in the Control Box.
2. Inspect wire for breaks, cuts, and fraying and that the wire is 18 gauge solid wire or larger.
3. Confirm that the wire from the Control Box to the wires on the valve are connected using the grease filled wire nuts provided with the unit.
4. Disconnect the wires at the grease filled wire nuts and turn the unit on. While the unit is showing fill on, check for 24 VAC on the wires from the control box. Replace wire as needed.
5. Open the valve and inspect the seal and diaphragm. Repair or replace valve as needed.
6. Reinstall the valve and test the unit. Replace valve as needed.

NOTES

FluidraProAcademy.com | 1.800.822.7933