

Automatic Lighting Control

Troubleshooting

Procedures

Verify that Power is present.

Look at the LED's on the controller board located on the inside of the door. The LED's will tell

you the status of the system. Start reading the LED's from the bottom.

- a. The "Power" LED should be on. If not refer to line #5.
- b. The "Factory Use" LED should not be on.
- c. The "Controller OK" LED should be on. It will flash for a short period on initial startup. (approx. 45 seconds)
- d. The "Security Alarm On" LED should not be on. If it is on the alarm needs to be reset or the Security N/O N/C switch on the top of the controller board is in the wrong position. The normal position is N/O.
- e. The "Motion On" LED when lit, means the motion sensors are sending a signal after detecting motion.
- f. The "Push Button On" LED when lit, means the push button has been activated.
- g. LED's that are flashing indicate a time delay in progress.

DAY MODE

DAWN/DUSK >> Only one will be lit depending on the status of the Light Sensor

NIGHT MODE

1. Make sure all relays are in place while troubleshooting.
2. When reading DC voltages always test from **green** ground terminal to pole being tested.
3. Test to confirm 120 VAC is present between **black** hot terminal and **white** neutral terminal from control circuit breaker. If not check the circuit breaker.
4. With 120 VAC present the override switches should be operational. If the store is occupied activate appropriate overrides for functional lighting.
5. Some LED's on controller board should be illuminated. If not open fuse holders **F-1 and F-2** and check fuses for continuity.
6. If a bad fuse is found, disconnect the three wire connector and the 24 pin connector from the controller board. Replace the fuse and close the holder. If **F-1** was the bad fuse and it blows again when the holder is closed there is a problem with the transformer itself. If **F-2** was the bad fuse, replace and take a reading from the end of the 3 wire connector between the orange and the brown wires 24 VAC should be present, if it is plug the 3 pin connector back into the controller board. If the fuse blows at this point, there is a problem with the circuit board. If not plug in the 24 pin connector as well.
7. LED's on controller board should be illuminated:
 - Power ON
 - Controller OK - will flash for a short period of time.
 - One of the mode LED's should be ON (Night, Dawn, Dusk)

Night Mode ON- (To simulate cover light sensor).

Should read approx. 21 VDC on both the **gray** and the **purple** wire on the CANOPY and SIGN relays. Test each color to **green** ground. With the overrides in the OFF position- should read 120 VAC on both the **pink** and the **black** wire on the CANOPY and SIGN relays. Test each color to the **white** neutral terminal. Should read 120 VAC between **A1** and **A2** on the CANOPY and SIGN contactors. If not present test **A1** to **green** terminal.

Dawn/Dusk ON and Push Button ON

Override in OFF position. SIGN relay should read approx. 21 VDC on the **gray** and **purple** wires. Test each color to **green** ground terminal. Should read 120 VAC on **pink** and **black**

wires on SIGN relay. Test to **white** neutral wire. Test for 120 VAC between **A1** and **A2** on SIGN contactors. If not present test **A1** to **green** ground.

Day Mode-

CANOPY and SIGN relays should not operate except on bypass

Motion Sensor -

Verify wiring matches color for color on both sides of terminal block.

The motion sensor itself also has an LED that should be illuminated when activated.

When motion sensor is not activated the reading between **red** and **white** terminals will be 24 - 26.5v.

When the sensor is *activated* you should get the following readings:

24 - 26.5 VDC between **red** and **black** terminals.

0 VDC between the **red** and **white** terminals.

0 between **white** and **black**.

If not check the fuse and replace if necessary. If it blows again disconnect the field wiring from the terminals and replace the fuse. If it is OK check field wiring for a problem. If no problem is found there is a problem with the circuit board.

Reconnect the field wiring after the problem has been solved. **Reconnect with the fuse in the disconnected position.**

With the override in the OFF position on WORK relay it should read:

24 VDC on gray and blue wire on work relay

Test each color to green ground terminal. Should read:

120 VAC on **pink** and **black** wires on work relay.

Test each color to **white** neutral terminal.

Test for 120 VAC between **A1** and **A2** on WORK contactors.

If not present test between **A1** and **green** ground terminal.

Motion Lights staying ON -

Make sure there is nothing present that will keep activating the motion sensor.

Install a jumper between the **blue** terminals marked **red** and **white**.

The led on the controller board marked motion on should start blinking. Wait until this light stops blinking and goes out. At this point the lights should turn off. If only the led reacted properly and the lights stayed on the relay is bad.

If the lights turned off remove the jumper and disconnect the wires at the motion sensor and connect the **red** and **white** wire together. You should get the same reaction if not inspect cable run. If yes replace the motion sensor.

Motion Lights not turning ON -

1. Install a jumper between the **red** and **white** wires on the blue terminals. The led on the control board and the lights should turn on.

YES- remove the jumper and reconnect the **red** and **white** wires. Goto step 2.

- NO**- Problem with the ALC control panel.
2. Disconnect the motion sensor and connect the **red** and **white** wires together. The led on the control board and the lights should turn on.
- YES**- Replace the motion sensor.
- NO**- Problem with the wiring to the motion sensor form the ALC.

Push Button-

Verify wiring matches color for color on both sides of terminal block.
The PUSH BUTTON sends a momentary signal to the controller board. The PUSH BUTTON LED on the controller board should stay on when the button is pushed and go off when the button is pushed again.

24 - 26.5 VDC should be present on the **red** terminal.

Appox 17 VDC should be present on the **black** terminal when the button is held in or bypassed. Both should be tested to the **green** ground terminal.

Push Button ON- (sales relay override off position)

Verify wiring matches color for color on both sides of terminal block.

Should read approx. 21 VDC on **gray** and **blue** wires.

Test both colors to **green** ground terminal.

Should read 120 VAC on **pink** and **black** wires.

Test both colors to **white** neutral terminal.

Test for 120 VAC between **A1** and **A2** on SALES contactor. If not present test between **A1** and **green** ground terminal.

Push Button- Sales Lights staying ON

Connect and Disconnect a jumper between the **yellow** terminals marked **red** and **black**. This should activate and deactivate the push button led on the controller board and sales lighting contactors.

If only the controller board reacts the relay is bad.

If the sales contactors activate, remove the switch and connect and disconnect wire together you should get the same reaction, if not check the cable run.

Light Sensor

Verify wiring matches color for color on both sides of terminal block.

Should read 24 - 26.5 VDC between **red** and **black** terminal

Day Mode- Should read approx. 20 - 21 VDC between **red** and **white**.

0 - 10 VDC between **white** and **black** terminals.

Dusk Mode- Should read approx. 22 - 24 VDC between **red** and **white**.

1 - 5 VDC between **white** and **black**.

Night Mode- Should read approx. 25 - 26 VDC between **red** and **white**.

0 between **white** and **black** terminals.

Outside Lights and Signs staying ON

Install a jumper between the **green** terminals marked **red** and **white**. This should turn off the night mode led and turn off the Canopy lights and Signs.

If only the led reacts the corresponding relay is bad.

If the Canopy and Signs turn off, remove the jumper and disconnect the Light Sensor.

Now connect the red and white wires together and the same reaction should occur.

If not check the cable run.

If yes, check light sensitivity.

Outside Lights and Signs not coming ON -

1. Adjust the Light Sensitivity counterclockwise (toward DIM) to make the lights come on at a brighter light level.

2. Double check the location of the light sensor for any artificial light sources.

3. Disconnect the **white** wire on the green terminals this should turn on the led and contactors for lights.

YES- Reconnect the wire and proceed to the next step.

NO- Problem with the ALC control panel.

4. Disconnect the **white** wire at the light sensor. This should turn on the led and contactors for lights.

YES- Replace the light sensor.

NO- Problem with wiring to the light sensor.

All Lights Staying On-

Check the Security switch on the controller board to verify that it is in the proper position.

Check to see if the Reset Button is not stuck in the depressed position.