

For Indoor Lights Signs Site and Parking Lights

NO PROGRAMMING NECESSARY



Model Designations

This installation manual may be used for several different Light**stat**[®] ALC or ALT models. Check the model number for your specifications.



Typical Model Number	Description		
ALC-4-16	16 (20 Amp) Circuit Control		
ALC-4-32	32 (20 Amp) Circuit Control		
ALC-4-48	48 (20 Amp) Circuit Control7/17/2015		



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The door panel of the Automatic Lighting Control box contains status lights and bypass dials.



Model ALT

Bypass dials allow you to temporarily override each channel individually. Rotate the desired dial(s) to the amount of time desired.

Note: Model ALC is a lighting control only. Model ALT is a lighting control with integrated thermostats.





Automatic Lighting Control Suggested Operation

Manager Arrival in the Morning:

Initially, all inside and outside lighting is off; the store has been closed for the night. Whether it is dark or light outside, all outside lights will be off, except security lighting.

The manager unlocks the front door, steps inside. As the manager enters the store, the motion detector picks up motion and turns on the WORK level lights. This is enough light to stock and clean up.

Store Ready to Open for Business:

The manager unlocks the front door, and pushes the Open/Closed Button at the front desk. This turns on the SALES level lighting.



An Afternoon Storm goes through:

When the outside ambient light level drops to about 30(approx.) foot-candles, the SIGNS will come on. This brings on all outside signs, showing you are open for business on a rainy day. When the storm passes and the ambient light level increases above 80(approx.) foot-candles, then the SIGNS lights will go off.

It's starting to get Dark:

As evening approaches, and the ambient light level drops to 30 (approx.) foot-candles the outside SIGNS come on.

Night approaches:

As ambient light level drops to 5(approx.) foot-candles, the outside SITE lights come on for safety and security.

It's 9:59PM and the Store is ready to Close:

The Open/Closed Button is pushed along with a message to bring all final purchases to the front. The store is closed for business. The inside SALES lights and the outside SIGNS will go off immediately.

It's 10:20PM and everyone is out of the Store:

No motion is detected after 20 minutes and the inside WORK lights go off automatically. 45 minutes later, the outside SITE lights go off. All controlled lights are now off, except security lights.

Its 2:30AM and a possible thief is at the back door:

When the Security Alarm is triggered all the inside and outside lights come on automatically. Lights go off automatically after 1 hour if there is no motion.

Automatic Lighting Control Suggested Load Splits

WORK Level Lighting:

Approx. 30 - 50% of sales floor lighting, in an even pattern for working in the store, before opening time. Check for receptacles that may be on a lighting circuit to allow vacuuming before store opening. Include drinking fountain and water heater if desired.

SALES Level Lighting:

Approx. 50 - 70% of sales floor lighting, including cove lights, valence lights, interior signs, spot and track lighting and displays. Include monitors and other miscellaneous loads. *Rear offices, bathrooms, supply and equipment rooms should use motion detecting wall switches, and not be controlled by the ALC.*

Outside SIGNS:

All outside signs including building signs, and pylon signs. Turn ON at dusk ambient light level and OFF with either brighter outside ambient light level or at the closing of the store.

Outside SITE & Parking Lot Lights:

Includes all outside lighting that is not a sign. Turn ON at night light level, and OFF 45 minutes after the WORK lights have gone off. This will allow ample time for employees or customers to leave the area in safety.

SECURITY LIGHTS:

Turn ON at dusk and stay on until dawn.

DAYLIGHTING Channel:

Lights turn on when Interior light level is below a set level. Lights turn off when interior light level is above set level. Note that the store must be occupied before any outside lights can turn on, except for SECURITY lights.



Features

- 1. No programming necessary
- 2. Easy installation
- 3. Timed override can be activated from the panel mounted by-pass timer
- 4. Panel lights indicate the status of each channel, as panel lights glow when a channel is turned on
- 5. Factory wired, labeled and functionally tested
- 6. UL recognized and meets N.E.C. requirements

Specifications

(Standard Models)

Dimensions:					<u>H</u>	X	<u>w</u>	X	<u>D</u>
ALC-4-48: (48 Circuits) 60 max.					40"	х	24"	x	10"
ALC-4-32: (32 Circuits) 40 max.					32"	х	24"	х	10"
ALC-4-16: (16 Circuits) 24 max.					24"	х	24"	х	10"
Shipping Weight:	ALC-4-4 ALC-4-3 ALC-4-1	18: 32: 16:	140lbs. 120lbs. 100lbs.						
Supply Voltage:	115VAC	C (+/- 10	%)						
Power Consumption:	2.0 Amps 115VAC maximum								
Contactor Switching Capacity: 60			C maximun os (Tungste	n en or Ballast F	ated	Loa	ds) pe	er p	ole
Operating Temperature:		32 ⁰ F - 1	.04ºF (0ºC -	- 40ºC)					
		sing							

Humidity: 0 – 99% RH non-condensing



Automatic Lighting Control System Specifications

(All models have similar construction)

- Cabinet:Steel construction with hinged door. Built to NEMA 12 requirements. Tool required for access.
Removable inside back plate for easy installation. Indicator lights for output stages. Safety bypass
timers for all loads. UL Listed.
- **Contactors:** 20 Amp per pole (tungsten or ballast) rating, electrically held. 4 poles per contactor. Easily field replaced. Standard with 120 VAC coils. UL Listed.
- **Exterior Light:** Variable photo diode type sensor. Sensitivity adjustable within preset minimum and maximum values. Not affected by wire runs of up to 1,000 ft.
- Sensor: Remote Light Sensor pre-mounted in weatherproof box for 1/2 inch threaded connection. Color keyed, shielded, low voltage plenum rated cable included.
- **Interior Light:** Variable photo diode type sensor. Sensitivity adjustable within preset minimum and maximum values. Not affected by wire runs of up to 1,000 ft.
- Sensor: Remote Light Sensor pre-mounted in wire mold box. Color keyed, shielded, low voltage plenum rated cable included.
- **Bypass:** For outside SIGN lights and outside SITE lights maintenance during daylight hours. Also for emergency operation of inside lights. Manual twist timer gives from 2-12 hours of "ON" operation of lights. Self-times off to prevent excessive operation. UL Listed.

Remote Push Button: One button, low voltage, remote switching for SALES Lights. Metal surface mount enclosure with button. Color keyed, low voltage, plenum rated cable included.

Remote Motion Sensor: Up to 6 motion sensors are supported (1 supplied with standard system). Motion sensors are pre-calibrated for minimum ON operation. Hardware is supplied for typical hung ceiling pad mounting. Color keyed, low voltage, Plenum rated cable included.

Security Alarm Interface: Color keyed, low voltage, plenum rated cable included for connection to isolated dry contact output from typical security system. ALC Logic Module may be configured for N.O. or N.C. alarm output. Optional Security Alarm Interface (SAI) is available to convert typical 12VDC alarm output signal.

Included: Wiring diagrams, 800 number Tech Support, spare parts warehousing and standard 2 year warranty.

ALC Installation Instructions

Read these instructions carefully and review the installation diagrams before starting. Note the cables and input devices provided with the ALC. If you think that you are missing something, call Lightstat Inc. Tech Support at once at 800-292-2444.

Installer must be a trained, experienced technician who is licensed to work in the local area. All wiring must comply with the N.E.C. and all local, state, and federal codes. Check the circuit breaker ratings to make sure that they are compatible with the contactor ratings of the ALC. Do not attempt to wire loads from circuit breakers greater than the contactor ratings. Failure to comply with instructions or codes could result in damage to the ALC or cause a hazardous condition leading to risk of electric shock or fire.



INSTALLATION

- 1. Unscrew the 4 10mm bolts that attatch the backplate and remove it from the cabinet. (Don't lose the bolts)
- 2. Set the backplate aside with the door for later.
- 3. Drill conduit holes for low voltage cables and line voltage conductors.
- 4. Mount the EMS cabinet to the wall securely. (optional mounting brackets included)
- 5. Attach the conduits and install the backplate with the 10mm bolts.
- 6. Reinstall the door and connect the harness cables.





Re-install the hardware back plate after the ALC is mounted to the wall.

Install a separate 1/2 in. conduit for the (4) low voltage cables. These cables fall under the N.E.C. "Class Two" category, they do not need to be in conduit except for appearance or protection if required by your local code. Note that the cables are color coded to the different input devices. The cables provided by the factory are plenum rated, so in most cases, they may be run free once they clear the ceiling level. Refer to the below list:

Blue Cable	Motion Sensor
Green Cable	Outside Light Sensor
Yellow Cable	Push Button
Orange Cable	Security
Black Cable	Aux Terminals
Pink Cable	Interior Light Sensor

Note that the color coded wires in each cable go to specific terminals. See the diagram on page 12 for these terminal connections. Also note shield connection for the Green Cable. <u>Do not let the uninsulated shield wire touch anything other than the terminal.</u>







Mounting the Push Button:

The Push Button must be located where it is easy to get to by store managers during the opening and closing of the store. Do not mount the Push Button where the customer can access it. It should not be in the way of normal activity, and should be kept clear of working surfaces. Mounting on a vertical surface is usually best. Make sure that the yellow cable is hidden from view. Use color coordinated surface raceway if the cable cannot be snaked through the wall.



This is a momentary push button and does <u>not</u> light up. Press for ON and press for OFF. If the power to the ALC is interrupted, you will need to press the Push Button again to bring on the SALES lights.

See Attached Wiring Diagram on Page 14



Push Button Termination



Mounting the Motion Sensor:

Mount the Motion Sensor(s) at the ceiling level, or bar joist level if it is an open ceiling. The motion sensor should be within 20 feet of the entrance, and typically over the checkout area where there will normally be personnel when the store is occupied.

The Motion Sensor(s) is factory set for sensitivity and time delays. If you feel that these need to be changed, consult the factory Tech Support department. Multiple Motion Sensors may be required to keep lighting on.

Use the supplied hardware for mounting the Motion Sensor to typical suspended ceiling panels. Make sure that your hands are clean when you are working with suspended ceiling pads...they smudge very easily and are nearly impossible to clean off.

Additional motion sensors are available and must be wired in parallel (See diagram on page 13).





Motion Sensor Connections



Connecting 2 Motion Sensors in Parallel (up to 6 sensors optional)





INSTALLATION OF THE MOTION SENSOR



TURN THE POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING SENSOR.

- To install the motion sensor in sheet rock or acoustic tile, the attachment ring provided is recommended.
- When local building codes mandate that low voltage connections be contained in a junction box, the motion sensor can be mounted using a Mud/Plaster ring.
 - When locating in an open grid ceiling, use of a junction box with a Mud/Plaster ring is recommended.



Motion Sensor Settings & Termination



Mounting the Light Sensor:

The Light Sensor is pre-mounted in a weatherproof housing. All connections are sealed with silicone or Teflon tape to prevent entry of moisture. Be sure that any entry you make to the housing is properly sealed to keep it weatherproof.

The barrel of the light sensor should point north away from lights. If this is not possible, there is some adjustment of the sensitivity to compensate for brighter or darker mounting locations. This adjustment is on the Logic Module. The ALC is factory pre-set for SIGNS to come on at approx. 30 foot-candles, and the SITE circuit to come on at approx. 5 foot-candles.

The logic control module of the ALC has LEDs to indicate the status of the light sensor.

ALC Logic Control Module:

O DAY MODE Outside light level bright enough so that SIGNS and SITE lights are both OFF.

O **DAWN/DUSK MODE** Outside light level dim so that SIGNS should come ON, but bright enough so that SITE lights are held OFF.

O **NIGHT MODE** Dark enough outside so that both SIGNS and SITE lights are ON.





To allow outside lights to come "ON" at brighter outside light levels, turn the adjustment knob clockwise. This will bring "ON" SIGNS and SITE lights sooner.

To keep the outside lights "OFF" longer, turn the adjustment knob counter-clockwise. This will bring SIGNS and SITE lights "ON" later.

RED WHITE BLACK With wire nuts, attatch green cable wires, black to black, white to white, red to red, shield to the box ground screw Light Sensor Cover Light Sensor Box GROUND SCREW SHIELD Light Sensor D GREEN LIGHT GREEN LIGHT SENSOR CABLE SENSOR CABLE

Outside Light Sensor Termination



SECURITY ALARM INTERFACE SPECIFICATIONS

Security System Voltage..... 14.0 VDC max. 11.0 VDC min.

Security System Current..... 30 mA max. @ 12.0 VDC

Operation: When 12 volt DC from a security alarm system is applied to the (bottom) "Security" terminals of this module, it causes the green LED to light and provides a dry contact closure across the (top) "ALC" terminals. This contact closure signals the Lightstat ALC (Automatic Lighting Control) via the orange cable, to turn on all inside lights, and outside lights; if dark enough.

The green LED will stay lighted as long as 12 volts DC is applied to the "Security" terminals. The alarm system should be configured so that 12 volts DC is present only when the security system is signaling an alarm condition. There should be no voltage present at the "Security" terminals during normal operation.

Fuse: Thermal Resettable, remove power for 2 minutes to reset. (Protects Security System if there is a problem with Security Alarm Interface)

Indicator: Solid State Green LED - "ON" when 12 VDC is present

Low Voltage Contact Closure: Suitable for interfacing to the Lightstat Automatic Lighting Control panel only.

Humidity: 10 - 95% RH, non-condensing

Enclosure: Painted steel with holes for surface mounting.

Suitable for use in NEC Class II DC Circuits Only

Model Number:

ALC-SAI-12DC







THERMOSTAT INTERFACE SPECIFICATIONS

Thermostat Interface System Voltage......36.0 VDC max. 16.8 VDC min.

Operation: The TME THERMOSTAT INTERFACE receives 24 volts AC from the Lighting Control. When the WORK lighting channel is not activated the Red LED's are off, the Interface relays are activated and a dry contact is closed, sending a signal to the Thermostat to go into the unoccupied mode. When the WORK lighting channel is activated the Red LED's turn on, the Interface relays deactivate and the dry contact opens sending a signal to the Thermostat to go into the occupied mode.

Circuit Breaker: .5 amp

Indicator: Solid State Red LED - "ON" when Thermostat is in occupied mode.

Low Voltage Contact Closure: Suitable for interfacing the *Lightstat Thermostat to the Lightstat Automatic Lighting Control only.*

Humidity: 10 - 95% RH, non-condensing

Enclosure: Painted steel with holes for surface mounting.

Suitable for use in NEC Class II DC Circuits Only

Model Number: ALC-TME- INT



TME Thermostat Interface





ALC Solid State Logic Control Module

The outdoor lighting sensor will be in one of three states:

DAY: Illuminated when the outside light level is high enough so that the SIGNS, and CANOPY will not be on. **DAWN/DUSK:** Illuminated when outside light level is low enough so that the SIGNS **w**ill be on, but not the CANOPY.

NIGHT: Illuminated when outside light level is low enough so that SIGNS, parking lights and CANOPY will be on.

The state of the inside sensors are indicated:

PUSHBUTTON: Illuminated when the sales lights are on.

MOTION: Illuminated when the motion sensor detects motion. The WORK lights will turn on. Flashing indicates no motion and time delay before turning off.

SECURITY: Illuminated with alarm "on" condition. The WORK and SALES lights will turn on. The outside SIGN and CANOPY lights will turn "on" if it is dark enough.

CONTROLLER OK: The controller is running. Flashing when the unit is initialized.FACTORY USE: Status indicator for factory test.POWER: Control power indicator. This should always be on when there is 120 volt power to the ALC.

MIRCOPROCESSOR RESET: Do not touch this unless directed by the factory. This will reset the control logic and will turn off the lights. Movement near the motion sensor should bring on the lights again.

LIGHT ADJUSTMENT: The sensitivity of the light sensor may need to be adjusted in the field depending on its location.



Wiring the Control Circuits

Connect the line and load wires to each pole of the designated contactor. It is highly recommended that the <u>Contactor</u> <u>Termination Print</u> be followed with the panel and circuit number of each wire connected to the ALC. This will make installation and trouble-shooting far easier. It also is good documentation to leave on the job.

Use the correct size wire for the loads. Do not exceed the maximum number of wires for the conduit size required. *Always turn off the power to any circuit that you are working on.*

Note that the contactors in the ALC are factory labeled for the control channels. Be sure to put lights that should be on the WORK channel, on the proper WORK labeled contactors.

It is highly recommended that each end of each wire be numbered, reflecting the circuit breaker that it originates from. The top screw of the contactor is the "Line" side, and the bottom screw of the contactor is the "Load" side.



Startup Checkout

After following the installation instructions on pages 9-27, you are now ready for a Functional Startup Check.

- 1. Verify the Motion Sensor(s) location is picking up motion upon entry of the store and maintains operation at each sensor location.
- 2. With the Push Button in the off position pick up each ceiling pad that has a Motion Sensor on it and move it until the Motion Sensor is hidden above another pad or cover the sensor with multiple layers of black tape.
- 3. Wait until the WORK lights turn off, approx. 30 minutes.



- 4. With the WORK lights off go to a Motion Sensor location and reveal the sensor so it senses motion. An internal LED will illuminate upon sensing motion, as well as, the Motion on LED on the Logic Module and the WORK contactors will activate turning the WORK lights on.
- 5. Cover the Motion Sensor again and wait until the WORK lights turn back off and repeat this procedure at each Motion Sensor location.
- 6. Verify that the proper lights are turning on as the WORK lights.
- 7. Push the OPEN/CLOSE Push Button to turn on the SALES lights. Push the button again to turn them off, and on again to ensure proper operation.
- 8. Verify that the proper SALES lights turn on and off with the Push Button.
- 9. Using black tape, gradually cover the Outside Light Sensor. When the Light Sensor is partially covered and the light level drops below 30 foot-candles, the SIGNS will activate. When the Light Sensor is fully covered and the light level drops below 5 foot-candles the SITE/Parking Lot lights will activate.
- 10. For mounting locations where the building or street lights are shining in the vicinity of the Light Sensor you may have to adjust the light sensitivity to compensate (refer to page 20), if there is an excess amount of exterior light in the area of the Light Sensor. Turn the knob C.C.W. to decrease the sensitivity. If the sensor is in a shadowed area or blocked from most of the available outside light you may have to turn the adjustment knob C.W. to increase sensitivity.
- 11. Verify the ALC Logic Module is receiving the alarm signal from the Security Alarm Interface. Put a jumper across the interface terminals marked "To ALC System" check the Security LED on the Logic Module which will now be lit. Remove the jumper and the Security LED will now be flashing. Push the Logic Module reset button and the system will activate all contactors and lights for approx. 45 seconds before returning to normal operating status.

Verify the Light Splits:

It is very important to verify the SALES and WORK light splits before you leave the job. The store manager must approve of the splits, and verify that important equipment or receptacles have not been put on the wrong circuit. Take your time, as this is the most important step of all.

Trouble-shooting (Page 24-26)

Contact the factory Tech Support department if you have questions that cannot be answered by this manual.

Lightstat Tech Support 800-292-2444



Automatic Lighting Control Two Year Factory Warranty

Light *stat*^{Inc}. warrants each product manufactured by it to be free from defects in material and workmanship under normal use and service; its obligation under this warranty, at its option, being limited to repair or replace the product if found defective, provided that it is removed by the installer and returned within twenty-four (24) months of the purchase to the factory with transportation charges, if any, prepaid, after first obtaining return authorization and shipping instructions.

THIS WARRANTY IS EXPRESSLY IN LIEU OF OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING A WARRANTY OF MERCHANTABILITY AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON ITS PART.

The company neither assumes nor authorizes any other person or organization, other than the seller, to assume for us any other liability in connection with this product. This warranty shall not apply to any product which has been subject to misuse, negligence, or accident, not to any product which was not operated in accordance with the printed instructions. The company shall not in any event be liable for any consequential damages, secondary charges, expenses of erecting or disconnecting, injury or damage resulting from an alleged defect in the unit.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

Manufactured by: Lightstat Inc. 22 W. West Hill Road, Barkhamsted, CT 06063

Contact us at (800) 292-2444 for questions regarding this Warranty.



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 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 "T-STAT INPUT ACTIVE" LED should not be on.
- c. The "CONTROLLER OK" LED should be on. It will flash for a short period on initial startup. (approx. 2 minutes)
- 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 front 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 "PUSHBUTTON 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 \gg Only one will be lit depending on the status of the Light Sensor NIGHT MODE

- h. The "FACTORY USE" LED should not be on.
- i. The "SECURITY N/C POSITION" LED should not be on.
- j. The "T-STAT N/C POSITION" LED should not be on.
- 1. Make sure all relays are in place while troubleshooting.
- 2. Note: When the green light is lit on the relay it is energized to turn that channel off.
- 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 the controller board (Mounted on door) should be illuminated. The 24 volt LED should be lit on the relay board (Mounted on the back plate) showing there is 24 volts from the transformer. If not check circuit breakers **CB-1 and CB-2** to see if they are tripped.
- 6. If there is a tripped breaker, disconnect the three wire connector and the 24 pin connector from the controller board. (Mounted on door) Reset the breaker. If CB-1 was tripped and it trips again there is a problem with the transformer itself. If CB-2 was tripped, reset the breaker 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 breaker trips 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. (Approximately 1 minute) One of the mode LED's should be ON (Night, Dawn, and Dusk)



Motion Lights staying ON -

Verify wiring matches color for color on both sides of terminal block.
Make sure there are not any sensors in the override dipswitch setting. (Refer to page 19)
Make sure there is nothing present that will keep activating the motion sensor.
Disconnect the white wire from the Blue terminal block.
The led on the controller board (Mounted on the door) 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 and LED turned off, reconnect the white wire and disconnect the wires at the motion sensor.
Connect the **red** and **white** wire together. The Work Lights and Motion LED should turn on.
Disconnect the **red** and **white** wires and the Motion LED should start blinking. If not inspect cable run. If yes replace the motion sensor.

Motion Lights not turning ON -

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

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. Go to step 2. **NO**- Problem with the ALC control panel. (Refer to Motion Sensor)

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 from 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. Approx. 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)

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**.

(Hold jumper on and off at 3 second intervals)

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 the wires 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 - 24 VDC between red and black.
	5 - 11 VDC between white and black terminals.
Dusk Mode-	Should read approx. 20 - 24 VDC between red and black .
	1 - 5 VDC between white and black .
Night Mode-	Should read approx. 20 - 24 VDC between red and white.
	0 between white and black terminals.

Outside Lights and Signs staying ON

Disconnect the field wiring from green terminal blocks for this test sequence.

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 reinstall the field wiring.

Disconnect wiring at 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.

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 N/O position. Check to see if the Microprocessor Reset Button is not stuck in the depressed position.



Mounting the Interior Light Sensor:

The Light Sensor is pre-mounted in a wire mold box housing.

The barrel of the light sensor should point toward the natural light source to be monitored. There is some adjustment of the sensitivity to compensate for brighter or darker mounting locations. This adjustment is on the Logic Module. The ALC is factory pre-set for DAYLIGHTING to come on at approx. 450 foot-candles, and to turn off at approx. 800 foot-candles.

The logic control module of the ALC has LED's to indicate the status of the light sensor.

ALC Logic Control Module:

- O INT IS DARK Light level is dark. Interior lights will be on.
- O INT IS BRIGHT Light level is bright. Interior lights will be off



To allow lights to come "ON" at brighter light levels, turn the adjustment knob clockwise. This will bring on Daylight channel

To keep the lights "OFF" longer, turn the adjustment knob counter-clockwise. This will bring lights "ON" at a lower light level.



INTERIOR LIGHT SENSOR TERMINATION





ALC Solid State Logic Control Module

Do Not Change Switch Settings after system set up.	Auxillary	Security	Delay	AUTOMATIC LIGHTING CONTROL
On when Aux in normally closed	(Left)	Ó	O On when Del normally clo	ay Input sed (Left)
	Aux input active) Security Alarm On		
		Motion □n ○ Pushbtton □n	◯ Controller	• On- Flashing indicates normal operation Solid indicates system delay
	Need mor Interior Light Adjustment	e light Int is Dark Int is Bright	◯ Power ⊡n	
Reset	Need less	: light		
Microcontrolle	Exterior Day	Day		Program Rev
	Light Adjustment			
	NG	IT () Might		Manufactured by: LIGHTSTAT Inc. Barkhamsted, CT 800-292-2444

The outdoor lighting sensor will be in one of three states:

- **DAY:** Illuminated when the outside light level is high enough so that the SIGNS, and CANOPY will not be on.
- **DAWN/DUSK:** Illuminated when the outside light level is low enough so that the SIGNS will be on, but not the CANOPY.
- **NIGHT:** Illuminated when the outside light level is low enough so that SIGNS, parking lights and CANOPY will be on.

The state of the inside sensors are indicated:

PUSHBUTTON: Illuminated when the sales lights are on.
MOTION: Illuminated when the motion sensor detects motion. The WORK lights will turn on.
Flashing indicates no motion and time delay before turning off.
SECURITY: Illuminated with alarm "on" condition. The WORK and SALES lights will turn on. The outside SIGN and CANOPY lights will turn "on" if it is dark enough.

CONTROLLER OK: The controller is running. Flashing when the unit is initialized.FACTORY USE: Status indicator for factory test.POWER: Control power indicator. This should always be on when there is 120 volt power to the ALC.

MIRCOPROCESSOR RESET: Do not touch this unless directed by the factory. This will reset the control logic and will turn off the lights. Movement near the motion sensor should bring on the lights again. **LIGHT ADJUSTMENT:** Sensitivity of the light sensor may adjusting in the field depending on its location.

The interior lighting sensor will be in one of two states:

INTERIOR IS DARK: Illuminated when the inside light level is low enough so that the Interior lights on the Daylight channel will be on.

INTERIOR IS BRIGHT: Illuminated when the inside light level is high enough so that the Interior lights on the Daylight channel are off.



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