Alec™ SmartLighting

# – All-in-one Lighting Energy Controller

## An Intelligent Lighting Controller For Smart Buildings

Meets all Building Energy Codes: **ASHRAE 90.1**, **NECB**, **IECC** & **Title 24**, etc

Alec ZC001

One device supports **EVERY** regulation-mandated energy saving strategy:

1. Daylight Harvesting
2. Occupancy Partial ON (≤50%), Vacancy OFF
3. Occupancy Fully ON, Vacancy Partial OFF(≤50%)
4. Manual ON, Vacancy OFF.
5. And many more capabilities mandated by ASHRAE 90.1, IECC, Title 24, etc.
6. Special **Alec Smart Energy Saver** further optimizes energy saving with variable vacancy off period based on the zone's activity level.
7. Unique **Smart Vacancy OFF** ensures that the lights will never be turned off on any actively occupied zones.

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Call For Free Consultation:
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## Introducing Alec

**Alec** (**A**ll-in-one **l**ighting **e**nergy **c**ontroller) by Triangle Research is the world's first intelligent lighting controller for Smart Buildings. It integrates **ALL** lighting control functions and energy saving strategies into a single palm-sized unit.

The same **Alec** lighting controller can be installed in any space and set up for any lighting control function with a few clicks of the mouse, using the simple-to-use **Alec** Commander software or a phone app.

## Energy Conservation Building Codes

| CODE REQUIREMENTS | | ASHRAE 90.1 2010 | ASHRAE 90.1 2013/2016 | TITLE 24 California 2016 | Alec Lighting Controller |
|---|---|---|---|---|---|
| | If light is dimmable, dimmer control with manual On/Off required. | N.A. | N.A. | ✓ | ✓ |
| | Manual ON, Vacancy OFF after:<br>a) 30 minutes<br>b) 20 minutes | ✓<br>N.A. | N.A.<br>✓ | N.A.<br>✓ | ✓<br>✓ |
| ≤50% | Occupancy Partial ON ( ≤ 50%)<br>Vacancy OFF after:<br>a) 30 minutes<br>b) 20 minutes | ✓<br>N.A. | N.A.<br>✓ | N.A.<br>✓ | ✓<br>✓ |
| ≤50% | Occupancy Fully ON,<br>Vacancy Partial Off (≤ 50%) after:<br>a) 30 minutes<br>b) 20 minutes | ✓<br>N.A. | N.A.<br>✓ | N.A.<br>✓ | ✓<br>✓ |
| | Automatic Daylight Control (Daylight Harvesting) required in all daylight zones. | ✓ | ✓ | ✓ | ✓ |
| | Automatic Time-Switch with Astronomical Clock required to schedule outdoor lights On/Off/Dim | N.A. | ✓ | ✓ | ✓ |
| kWh | Energy Reporting, Monitoring and Energy Management System | N.A. | ✓ | ✓ | ✓ |
| DR Demand Response | Demand Response. Required in all non-residential buildings >10,000 sq ft. Must be capable of automatically reducing total lighting power usage by at least 15% | N.A. | N.A. | ✓ | ✓ |

## Alec Features

1. Continuous 0-10V Dimming and On/Off relay control using a single low voltage push button switch.
2. Energy Saving Functions:
   - Programmable Occupany-On and Vacancy-Off time out.
   - Daylight Harvesting control.
   - Programmable Scheduling: Turns On the lights at different brightness depending on the time-of-the-day. Control settings (e.g motion On/Off enabled/disabled and the time-out) can also be set to change from time to time automatically.
3. Power Consumption Data: Logs hourly and daily energy consumption using built-in kWh meter.
4. Works standalone and does not depend on communications with other devices.
5. IoT Ready: Connect multiple **Alec** zone controllers to a gateway and control them via computers or smart devices over the LAN or the Internet.


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## Energy Code Compliance

As a lighting professional, you might have already confronted the new energy saving regulations added to the building codes that require your compliance for all new projects.

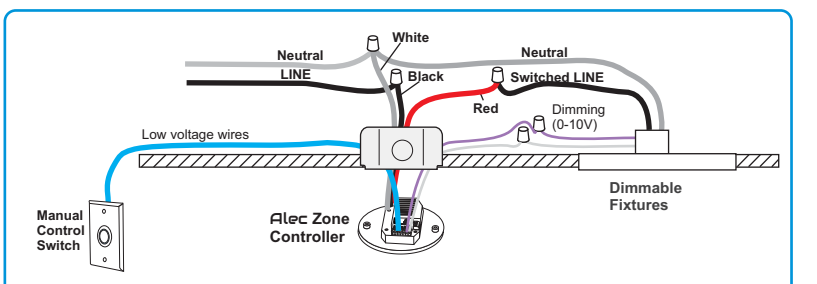
The most common energy conservation standards adopted in North America are the ASHRAE 90.1-2010/2013/2016, IECC, NECB, and California Title 24. All these new energy codes now require all lights which are not needed, to be automatically turned OFF or dimmed down using some type of lighting control technology. There are different rules applicable to different types of space and these are commonly termed "energy saving strategies" or "control strategies".

**Alec** is fully configurable to implement **every** control strategy, and to comply with **every** building energy code mentioned above!

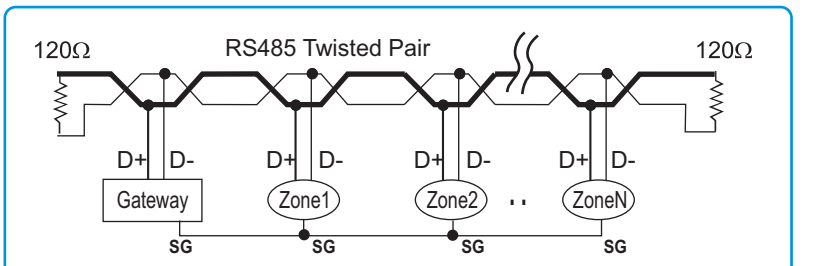
## Why is Alec Special?

In "traditional" lighting control solutions, each control function typically requires a separate component. In many solutions, these are integrated by highly customized combinations of control components.

An **Alec** zone controller, however, incorporates in the same device, **every** essential lighting control capability specified by the building lighting codes (such as daylight harvesting, occupancy on, occupancy partial on, vacancy off, vacancy partial off, energy metering, program scheduling, etc). Consequently, planning and installing a smart lighting control system with **Alec** becomes extremely simple and economical because you simply install the **same Alec** controller to automate every lighting zone (each **Alec** can run its own strategy). Unlike other solutions, the all-in-one design of **Alec** makes it economical to automate a single lighting zone, just as it is to automate a large system with hundreds or even thousands of zones.




Each Zone Controller can be installed as a standalone system




Daisy-chain each Zone Controller's RS485 via low cost twisted-pair cable

**Product Models**

# Alec Product Lineup

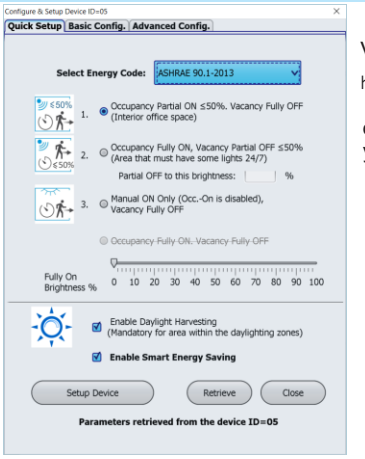
**Installation Guides**

**Alec ZC001**

A ceiling-mount All-in-One Lighting Controller with built-in motion and daylight level sensor, automated light dimming/on/off controls, schedule management, kWh reader/logger, Alec wall switch connection and RS485 connection port for network access.

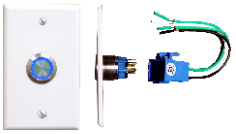
A standard Alec ZC001 mounted at 9 feet high ceiling will provide coverage over an area of approximately 200 sq ft. To extend the area controlled by one ZC001, additional external sensors, MoSen-SR-4m (see below) may be wired in parallel. For high bay applications, MoSen-LR (see below) may be wired instead.

Compliance to applicable major energy codes is a simple selection with the Quick Setup screen. Detailed fine-tuning of all control settings can be performed on the Basic & Advanced Config. screens.



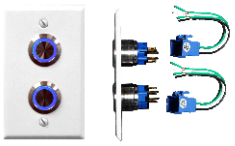

Visit the following link:
http://aleccontrol.com/installation-guides/

or scan the QR code with your mobile device.



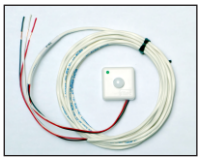
**PB01-BWS-1**

Single large momentary push button, with a blue-color LED status indicator surrounding the push button, and pre-assembled onto a US/Canada style, single-gang white steel wall plate. A quick-connect socket is also included so that the push button switch can be quickly connected to the wiring in the wall. The socket provides 4 wires (2 to the Normally-Open push button switch contact and 2 for the LED indicator).



**PB01-BWS-2**

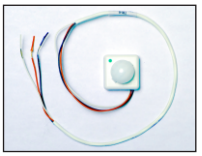
Two large momentary push button switches, each with a blue-color LED indicator surrounding the push button. The two push buttons are pre-assembled onto a US/Canada style, single-gang white steel wall plate. Two quick connect sockets are also included so that the push button switches can be quickly connected to the wiring in the wall. Each socket provides 4 wires (2 to the Normally-Open push button switch contact and 2 for the LED indicator).



**MoSen-SR-4m**

The MoSen-SR is an optional, supplementary motion sensor that can be used to extend the sensing range of the built-in motion sensor on Alec ZC001. Useful for applications involving large lighting zone to be controlled by a single controller.

The MoSen-SR-4m is supplied with a 4 meter (13 ft) long, UL/CSA FT6(CMP)-rated cable for quick connection to the Alec ZC001/ZC002 controller over a plenum space.



**Motion-LR**

The MoSen-LR is an optional, supplementary long range motion sensor that can be used to extend the sensing range of the built-in motion sensor on Alec ZC001. Useful for applications where the lighting controller needs to be installed on a high ceiling > 15 ft to as high as 40 ft.

Note: If you are installing Alec ZC001 or ZC002 on a high bay application where the ceiling is > 15 ft, you will need MoSen-LR to detect motion due to the limited range of ZC001's built-in sensor (5m/16 ft).

**Alec GW-E01**

Alec zone controllers can operate in standalone mode or be part of an Alec network group. Up to 128 Alec zone controllers can be daisy-chained via RS485 shielded twisted-pair wiring and be supported by one Alec Network Gateway to form one network group.

The Alec Network Gateway box connects to an Ethernet/Internet network, and with proper security settings, allows every Alec ZC001 zone controller to be accessed remotely and centrally for monitoring, clock synchronization, data-log extractions, new program/schedule uploads, and remote real-time switching instructions.

Any number of Alec Gateways can be managed centrally from the same management software, making Alec-based Smart Lighting systems infinitely scalable.

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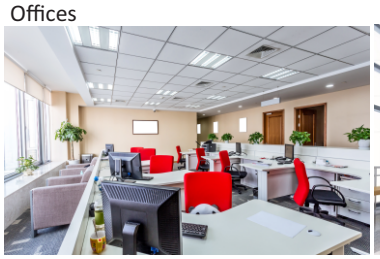
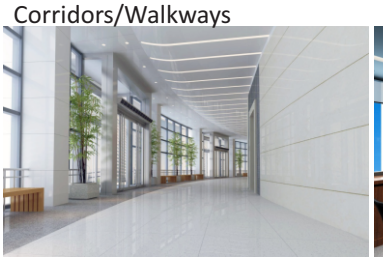
## Ideal Applications for Alec Smart Lighting Controllers

Offices



Corridors/Walkways

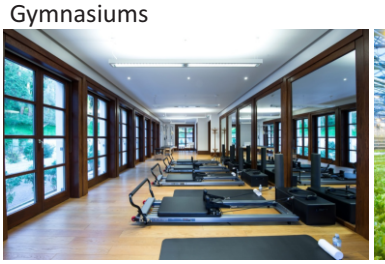


Meeting Rooms

Public Washrooms

Public Carparks

Gymnasiums



Green Houses

Warehouses

Notes