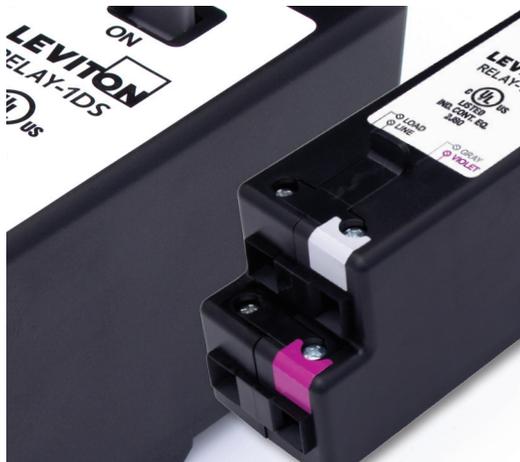
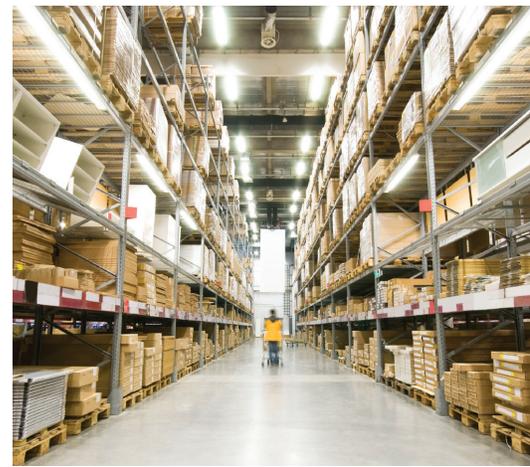


# GreenMAX™

## Relay Control Panels

### Smart Lighting Control



Built by the industry, for the industry.

# BENEFITS OF GreenMAX

## EXCLUSIVELY FROM GreenMAX— DIMMING AND SWITCHING IN THE SAME CABINET

GreenMAX allows you to set advanced control schemes from a single cabinet

### EASY TO INSTALL

GreenMAX cabinets are shipped empty to increase ease of installation and components can be shipped separately to meet your lighting demands, schedule and help manage cash flow

### EASY TO DESIGN

Unlimited and flexible lighting configurations allow you to program based on behavioral relationship commands

### EASY TO MONITOR, MANAGE AND MAINTAIN

Configure your lighting system in the space with a portable Handheld Display Unit (HDU) or from a remote location

### EASY CODE COMPLIANCE

Meets strict energy code performance requirements

#### **BUILDING PROFESSIONALS, ARCHITECTS, SYSTEM INTEGRATORS, PLANNERS AND INSTALLERS**

Flexibility, installation interoperability, simplicity, environmentally friendly

#### **BUILDING OWNERS, FACILITY MANAGERS AND PRIVATE CONSUMERS**

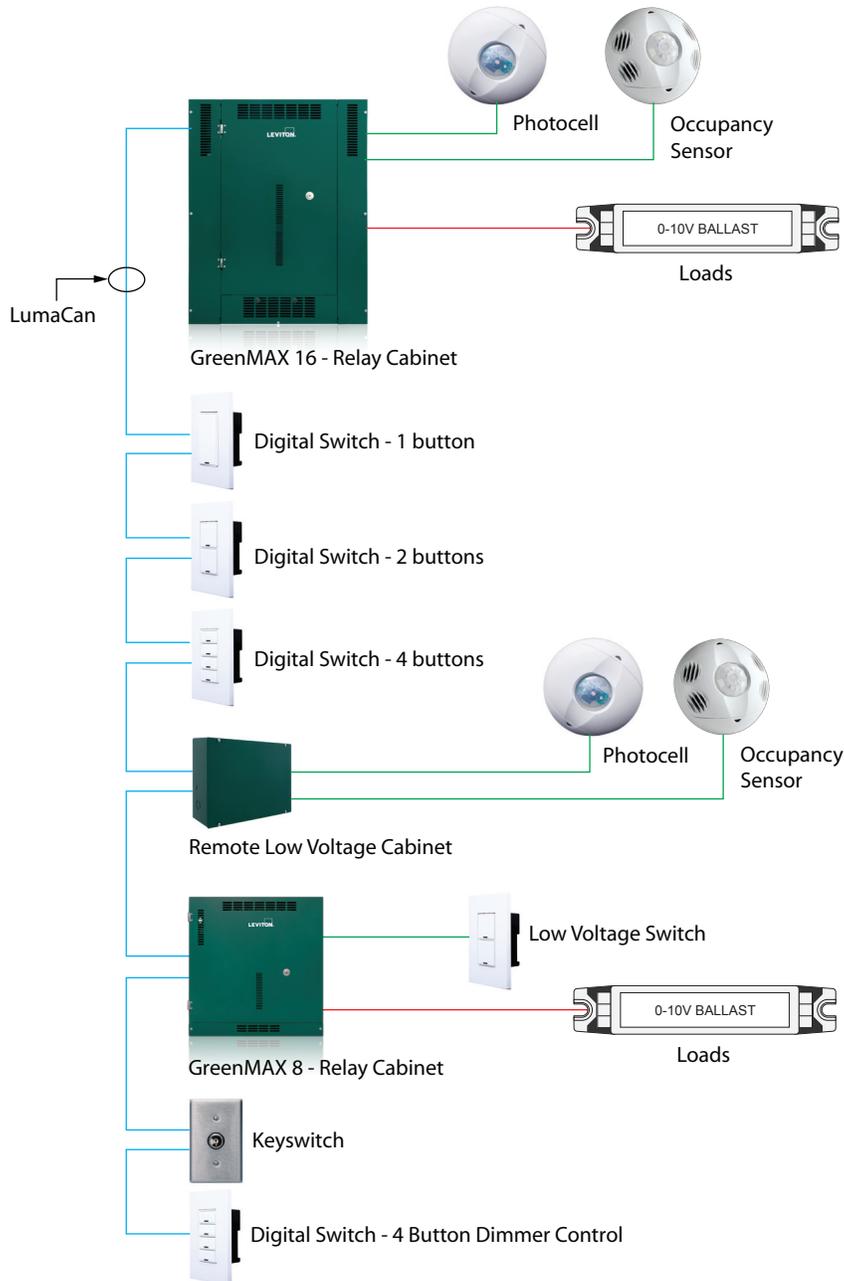
Energy savings, cost benefits, flexibility, comfort, simplicity



# LEVITON GreenMAX

## WHAT IS GreenMAX?

GreenMAX is a completely modular design offering a wide variety of relay options. GreenMAX includes integrated dimming, a 25,000A Short Circuit Current Rating (SCCR) and daylight harvesting. Programming and monitoring GreenMAX is quick and simple with a portable Handheld Display Unit (HDU) that allows for onsite or remote access. The modular design allows total installation flexibility and labor savings. Designed for the contractor, specifier and end user, GreenMAX offers the best performance, reliability, flexibility and energy savings of any relay control available.



## FLEXIBLE AND TIME-SAVING DESIGN FOR SPECIFYING ENGINEERS AND ARCHITECTS

- Ultimate time-saving design flexibility—easily integrate various lighting control capabilities like switching, dimming, Behavior controls, scheduling, occupancy sensing and daylight harvesting all from one system
- Scalable solution offers future expansion opportunities
- Easy energy code compliance
- Eligible for LEED points

## SIMPLE, SAFE AND COST-EFFECTIVE INSTALLATION FOR CONTRACTORS

- Modular system was designed to make installation of cabinet and conduits easy
- Wiring covers and isolation barriers provide total Arc Flash Protection and allow work to be done with power on without chance of exposure to high voltage—no Arc Flash Suit needed



## OCCUPANT SATISFACTION AND MAXIMUM CONTROL FOR END USERS

- Manage your lighting system in the space from a portable Handheld Display Unit (HDU)—no more walking to and from the electrical room
- Programming logic by Behaviors reduces programming time and increases functionality



## PROGRAMMING GreenMAX WITH LIGHTING BEHAVIORS

### LIGHTING CUSTOMIZATION

GreenMAX controls allow different Behavior settings to be programmed throughout the day. Using the HDU, any room can be set with just a few button selections:

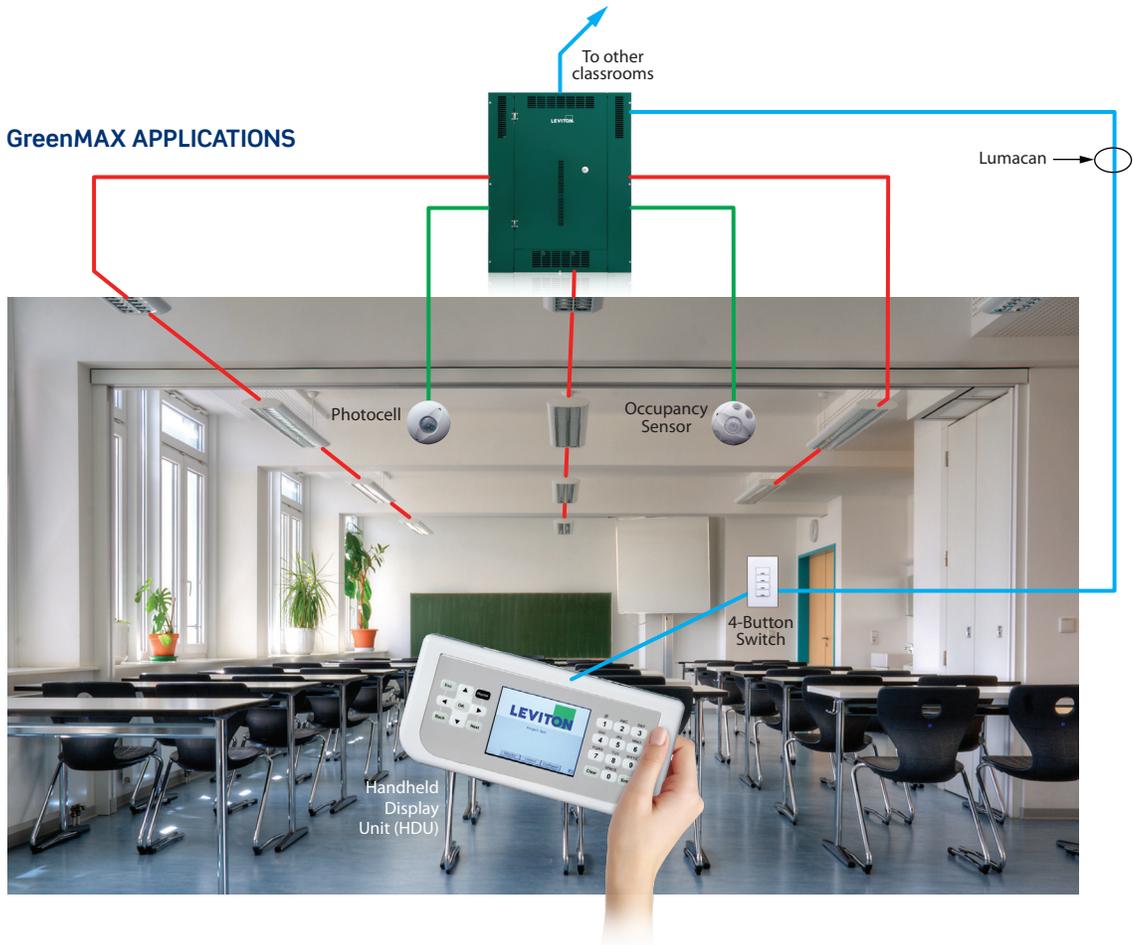
- Select the Behavior desired and time Behavior will take place
- Choose any additional Behavior transitions and the time transition will take place
- Optional override to sunrise/sunset astronomical clock prevents lights from activating prematurely in summer or too late in winter
- Set Behaviors to scale on a daily, weekly, monthly or holiday schedule
- Up to 24 Behaviors per 24 hour period can be programmed and can be as close together as one minute

### SIMPLE AND EASY PROGRAMMING

- Using the HDU, select the number on the screen corresponding with the desired Behavior
- Enter time and dates to be in effect and any corresponding Behavior Modifiers. Behaviors can be set for entire system or individual rooms/relays

## BEHAVIORS

NUMBER	DESCRIPTION
<b>B1</b>	Lights turned ON with the switch. Can be turned OFF with switch. Occupancy Sensor will turn OFF upon vacancy.
<b>B2</b>	Lights turned ON with the Occupancy Sensor. Can be turned ON/OFF with switch. Occupancy Sensor will turn OFF upon vacancy.
<b>B3</b>	Occupancy Sensor turns lights ON/OFF.
<b>B4</b>	Switch ON/OFF.
<b>B5</b>	Time triggers a Blink Warn sequence, an OFF blink followed by a variable ON delay. Switch interrupts sequence and starts override timer. Will automatically turn OFF relay if override timer reaches zero.
<b>B6</b>	Turn ON at specific time.
<b>B7</b>	Turn OFF at specific time.
<b>B8</b>	Occupancy Sensor turns ON lights with occupancy. Measured light levels above Photocell trigger point turns OFF or keeps lights OFF, below set-point allows control by Occupancy Sensor. Occupancy Sensor turns OFF lights with vacancy.
<b>B9</b>	Switch turns ON/OFF lights. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows control by Occupancy Sensor. Occupancy Sensor turns OFF lights with vacancy.
<b>B10</b>	Occupancy Sensor turns ON lights with occupancy. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows Occupancy Sensor control. Switch can turn ON/OFF lights by overriding Occupancy Sensor control. Occupancy Sensor will turn OFF lights upon vacancy.
<b>B11</b>	Switch ON/OFF. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows Switch control.
<b>B12</b>	Turn ON at specific time (Used for Exterior Lighting). Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point relinquishes control to the constant ON state.

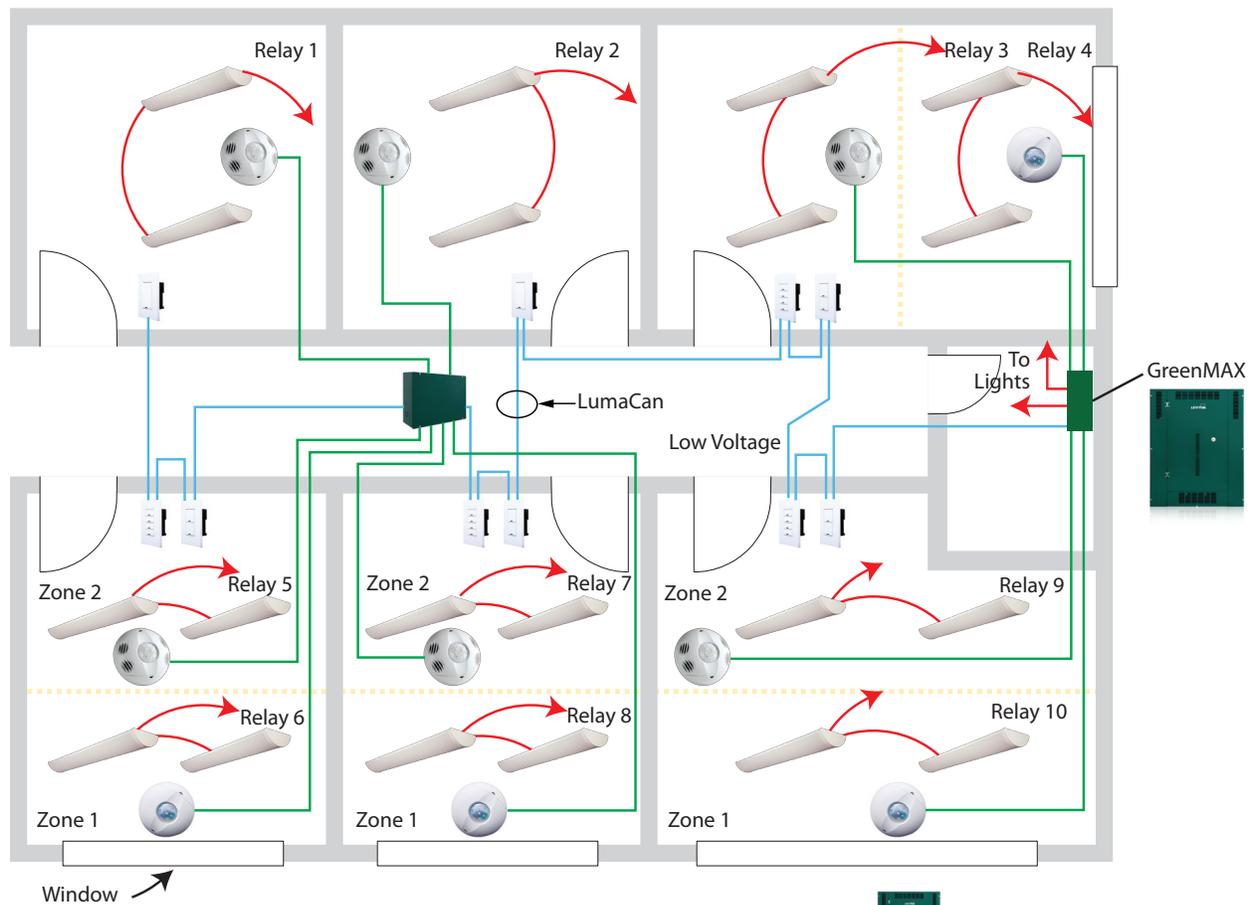


Proven interoperability and seamless integration with building management systems allows GreenMAX Relay Control Panels to follow set Behaviors based on time, day and the relationship between the switches, occupancy sensors and photocells in a given area.

- Schools
- Convention Centers
- Government Facilities
- Offices
- Airports
- Hospitals/Medical Offices
- Retail Stores
- Restaurants
- Virtually Any Commercial Building



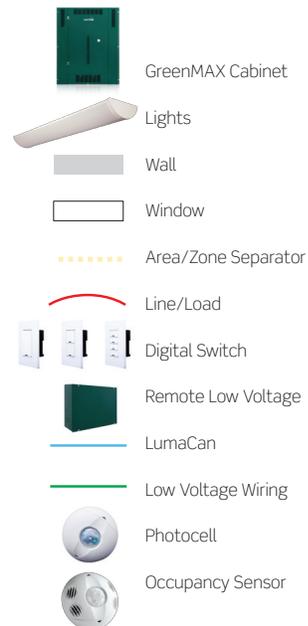
## OFFICE EXAMPLE



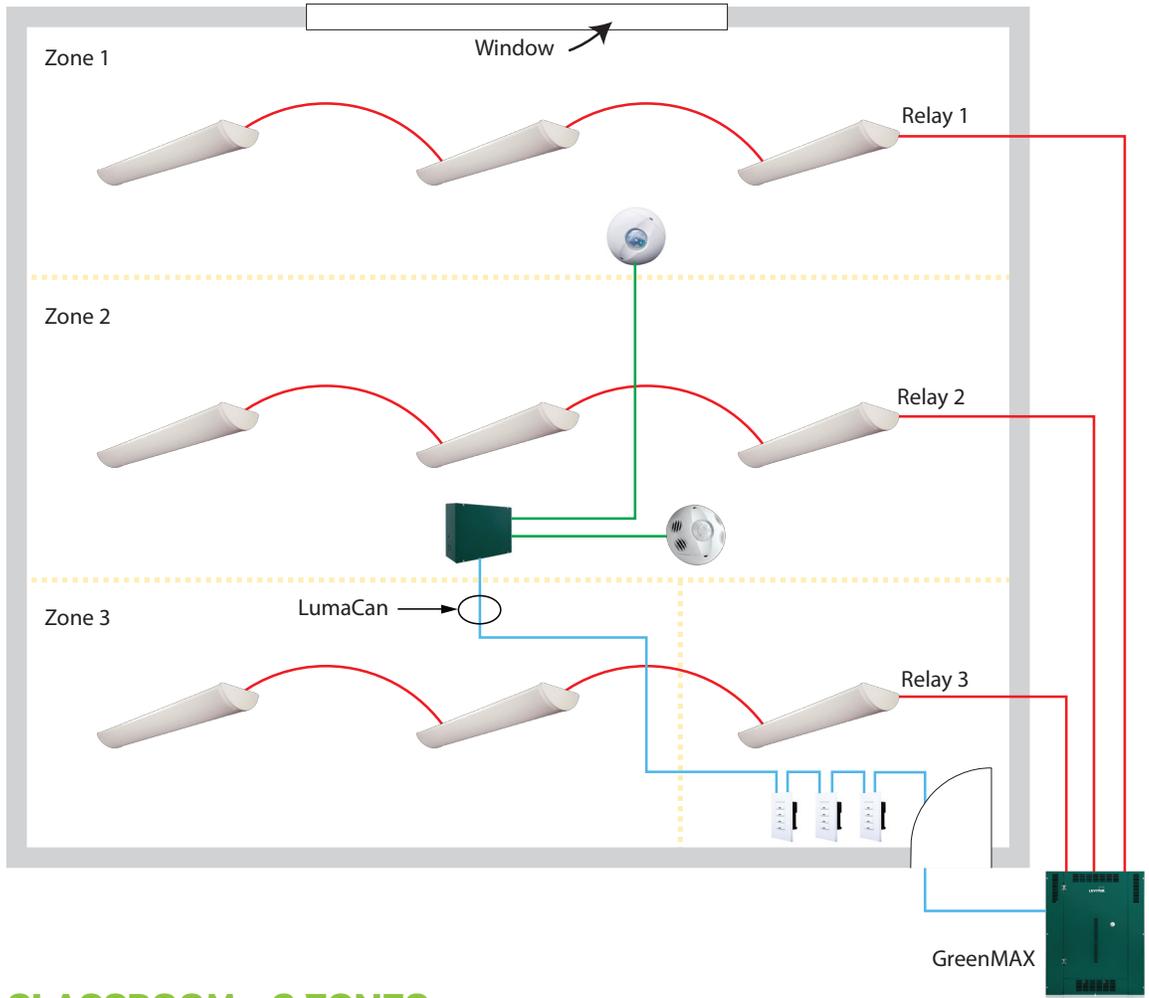
## OFFICE AREA - MULTIPLE ZONES:

Each area may be controlled independently and each room can be segregated by zone for customizable control.

- Rooms are equipped with photocells and occupancy sensors to achieve optimal daylight harvesting
- Using the Remote Low Voltage cabinet to connect sensors and switches allows shorter and less expensive wiring options
- Centralized control for time settings; ready to integrate with building automation systems



**CLASSROOM EXAMPLE**

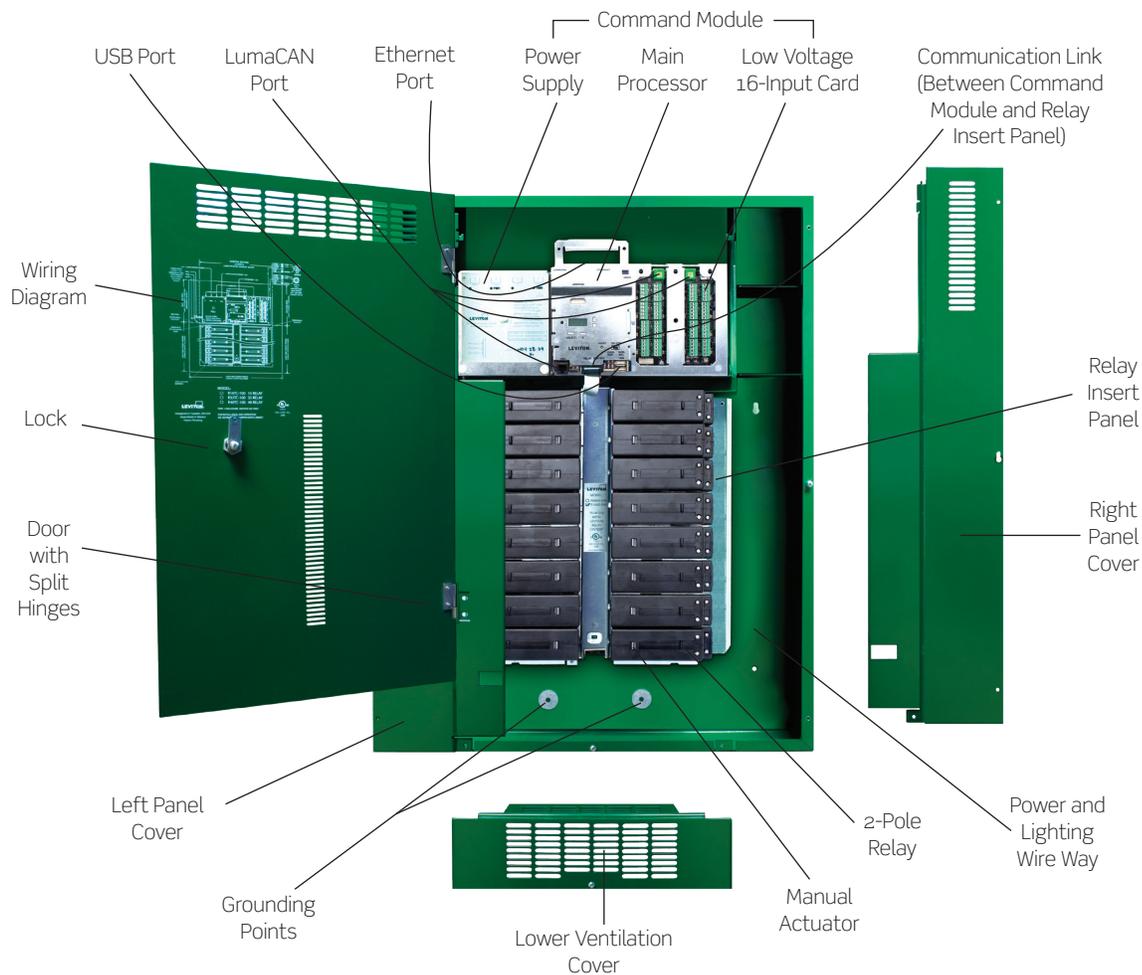


**CLASSROOM - 3 ZONES:**

This typical classroom configuration achieves daylight harvesting with a photocell and occupancy sensor that turns off the light when the room is vacant

- GreenMAX relays can dim all the lighting within the zone to the same lighting percentage
- Each row of lighting can be dimmed to different levels based on the availability of natural light; this setting will dim the lights nearest the window to match the lighting output of fixtures further away

- GreenMAX Cabinet
- Light
- Wall
- Window
- Area/Zone Separator
- Line/Load
- Digital Switch
- Remote Low Voltage
- LumaCan
- Low Voltage Wiring
- Photocell
- Occupancy Sensor



## GreenMAX INNOVATION

Leviton—developing innovative electrical products for over 100 years

### GreenMAX SYSTEM

- Industry leading 25,000A Short Circuit Current Rating (SCCR) at 277 VAC withstands circuit faults for increased safety
- Native communication network protocols—BACnet IP, Ethernet and LumaCAN—are built into each command module to offer unparalleled connectivity; no additional parts or adapters are needed to communicate with other products utilizing these protocols
- Modular system includes separate empty cabinet enclosures, command modules and Relay Insert Panels to minimize handling and subsequent damage during installation
- Easy updates—loading firmware is automated and only requires plugging in a flash memory card and pressing a button
- System can be connected via Ethernet or LumaCAN networks
- All network connections are made with RJ45 connectors and cabling is standard CAT6
- Low Voltage Remote Input Card can be combined with LevNet RF Wireless Self-Powered Solutions to create a wireless hybrid system of inputs
- All programming and configurations are stored on a MicroSD memory card, which eliminates need for non-volatile memory

## GreenMAX RELAY CABINETS

- Empty cabinet enclosures ship separately from electronic components making the cabinets lighter and easier to handle and requiring less effort to install
- Empty cabinet also provides unobstructed access to conduit entry points and reduces the risk of damaging electronics
- Relay cabinets can hold 8, 16, 32 and 48 relays, each with unlimited and flexible configuration capabilities. The 0-10VDC dimming and switching relay models can be installed in any available relay slot
- Increased Arc Flash Protection—the cabinet door opens to expose only the low voltage area of the cabinet
- Remote Low Voltage Panels allow the connection points of the low voltage wiring enclosure to be installed closer to the devices it serves, reducing wiring and labor costs and making commissioning or troubleshooting easier
- Takes only eight screws to assemble the internal Relay Insert Panels and command module of a 48-Relay GreenMAX cabinet
- A single relay or group of relays can be separated by sliding an isolation barrier between relays to eliminate the need for an additional cabinet to handle emergency loads



## GreenMAX SWITCHES



- Available in 1-, 2-, 4-button and keyswitch configurations
- The GreenMAX digital keyswitch provides solutions for public use areas by preventing unauthorized personnel from turning the switch ON or OFF
- Custom engraved labeling available on switch buttons and screwless wall plates
- Switch colors available: white, light almond, ivory, gray, black and red; all come with a matching wallplate. Keyswitch comes with a stainless steel wallplate and tamper-resistant screws (tool included)
- Each button of the digital switch has a green LED pilot light to report corresponding relay state (No LED on keyswitch)
- Switches can be ganged together in wallboxes (multi-gang wallplate sold separately)
- RJ45 connectors to provide inline connection to the LumaCAN network
- Any 4-button switch model can be configured to control 0-10VDC dimming circuits
- Easy to access port on top of switch provides connectivity for the GreenMAX HDU

## GreenMAX RELAY MODULES

- Same physical footprint for 1-pole, 2-pole and dimming latching relays, allowing the optimal mix of relays to be customized for each application
- Self-contained Dimming and Sensing Relay Module in 1-pole configurations features daylight harvesting capabilities
- All four wires required for 0-10VDC dimming ballast wiring connect directly to the module—no additional control board required
- All relays are latching with a manual actuator that allows users to manually bypass the system to turn lights ON or OFF without CPU power
- Relay terminals are connected directly to copper bus for greater strength than soldered circuit board mounted terminals
- Latching relay design retains state during power outages, unlike spring return relays that may change state in absence of processor signal power
- Power supply provides 3-5 second ride-through to maintain processor operation during power loss or brown-outs
- Selective emergency signal response relays may be programmed to turn ON, OFF or ignore an emergency signal from the command module
- The return to closed relay design for 1-pole and 2-pole provides closed contacts on loss of power for emergency response



## HANDHELD DISPLAY UNIT (HDU)

- Allows programming, system configuration and scheduling to be done in the space being controlled rather than the electrical room to make commissioning and set-up functions easier
- Configure and control the entire GreenMAX system (or multiple systems) from any convenient network access point—relay cabinet, Remote Low Voltage Panels or digital switches
- Provides interface with all devices and relays in the system
- One Handheld Display Unit (HDU) can be used for multiple systems—manage any GreenMAX system remotely from any network device location
- Communicates via LumaCAN or Ethernet
- Includes four AAA rechargeable batteries that charge when connected to LumaCAN



## ORDERING INFORMATION

CAT. NO.	DESCRIPTION
<b>Tubs and Covers (all cabinets are surface mount with a locking door)</b>	
Ro8TC-100	GreenMAX Relay Cabinet, 8-Relay Size, NEMA 1
R16TC-100	GreenMAX Relay Cabinet, 16-Relay Size, NEMA 1
R32TC-100	GreenMAX Relay Cabinet, 32-Relay Size, NEMA 1
R48TC-100	GreenMAX Relay Cabinet, 48-Relay Size, NEMA 1
<b>Command Modules (includes power supply and main processor unit)</b>	
RPM00-100	Main Command Module, 100-277VAC, no inputs
RPM08-108	Main Command Module with 8-Port Low Voltage Input Card, 100-277VAC, 50/60Hz
RPM16-116	Main Command Module with 16-Port Low Voltage Input Card, 100-277VAC, 50/60Hz
<b>Panel Interiors</b>	
Ro800-000	Relay Insert Panel, Empty with (8) Spaces
R1600-000	Relay Insert Panel, Empty with (16) Spaces
R1616-1CB	Relay Insert Panel with (16) 1-Pole RTC Basic Relays
R1616-1TB	Relay Insert Panel with (16) 1-Pole Basic Relays
R1616-2CB	Relay Insert Panel with (16) 2-Pole RTC Relays
R1616-2TB	Relay Insert Panel with (16) 2-Pole Basic Relays
<b>Dimming and Switching Interior</b>	
R1616-1DS	Relay Insert Panel with (16) 1-Pole
<b>Handheld Display Unit (HDU)</b>	
RHDU1-000	Handheld Display Unit, Cabinet Mounting
RHDU1-BKT	Handheld Display Unit, Mounting Bracket Requires 2 Gang Back Box
<b>Remote Inputs with Power Supply (all remote inputs are rated 100-277VAC)</b>	
RLV08-110	Remote Low Voltage Input Cabinet, 8 Inputs, NEMA 1 Enclosure
RLV16-110	Remote Low Voltage Input Cabinet, 16 Inputs, NEMA 1 Enclosure
<b>Relays (all relays are rated 30A, 120-230-277/347VAC, 50/60Hz)</b>	
RELAY-1CB	GreenMAX Latching Relay, 1-Pole RTC Basic
RELAY-1DS	GreenMAX Latching Relay, 1-Pole Dimming and Switching
RELAY-1TB	GreenMAX Latching Relay, 1-Pole Basic
RELAY-2CB	GreenMAX Latching Relay, 2-Pole RTC
RELAY-2TB	GreenMAX Latching Relay, 2-Pole Basic
RELAY-BFM	Blank Filler Module
RGBAR-008	GreenMAX Voltage Barriers for 8 Relay Cabinets
RGBAR-016	GreenMAX Voltage Barriers for 16, 32 and 48 Relay Cabinets



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