

ENERGY SAVING SOLUTIONS: LIGHTING CONTROLS

Interior and Exterior
Layout and Design for
Maximum Energy Savings

TORK® : 1
THE SOURCE
FOR SOLUTIONS



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EXTERIOR LIGHTING ZONES

When ambient light levels drop at dusk, lighting is needed to provide safety and security. BUT: Does all lighting need to be on all night long? The proper selection of lighting controls is essential to ensure that energy is only used when needed. An efficient lighting control design creates zones of light levels that can be varied by time at night.

ZONE 1: DUSK TO DAWN

Security Lighting (all night): Photocontrols, Photosensor controls

The first zone gives a minimum light level where security is the primary need. Determine what lighting is necessary, such as building-mounted wallpacks and a portion of the parking lot lighting. These should be on from dusk to dawn, and are best controlled by a photosensor device.

ZONE 2: DUSK TO TIME OFF


Safety and Architectural Lighting (not necessary all night): Photosensor/Time-based controls, Astronomic controls

The second zone provides a higher light level for safety, when people are normally present. Maximum levels for the parking lot and all walkway lighting are needed. These lights are best controlled by a combination photosensor and time-based device to allow shut-off during the night. The astronomic-calculated sunset/time control can also be useful.

ZONE 3: ARCHITECTURAL

Building Facade, Landscape and Signage: Astronomic controls

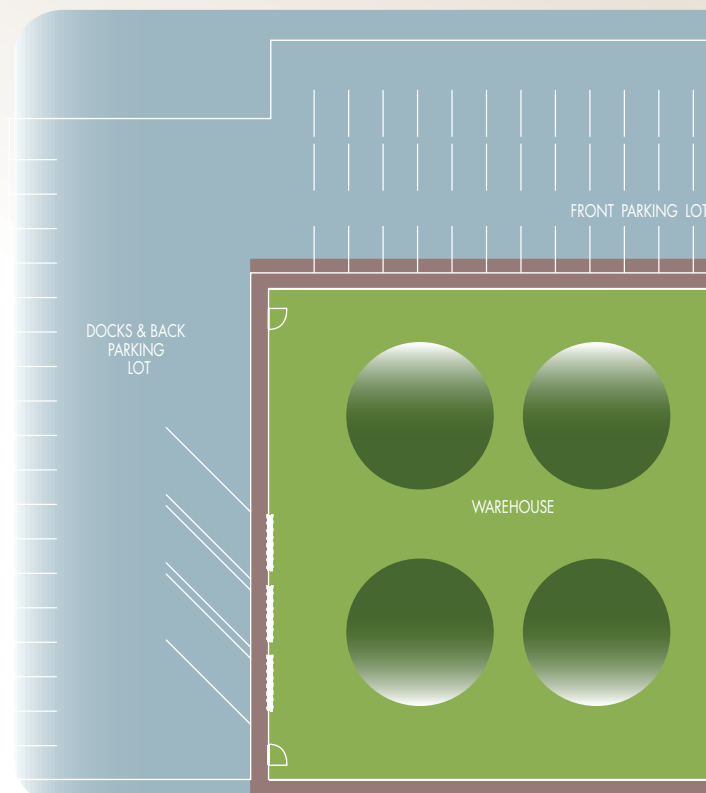
The third zone covers architectural lighting for building facade or landscape and signs. These are best controlled with an astronomic-calculated sunset/time control.



Responsible Energy

Each of these marked products have features that decrease energy consumption and/or damage to the environment by one or more of the following:

- Timed control, Photocontrol and/or Astronomic control of on and off functions of lighting, fans, pumps and appliances
- Timed control of systems or multiple zones of lighting
- Photo or occupancy sensing control of lighting
- Supercapacitor backup, no batteries to replace or dispose.
- Helps meet CA Title 24, ASHRAE, IECC and other standards for responsible building products



EXTERIOR LIGHTING ZONES

ZONE 1: DUSK TO DAWN

SECURITY, CANOPY & PARKING LOTS

2001 SERIES 180° SWIVEL, PHOTOCONTROL

CATALOG NO.	UPC CODE	VOLTAGE 50-60Hz
2001	60015	120
2002	60016	208-277
73866	62020	Mounting Bracket



5000M SERIES TURN-LOCK PHOTOCONTROL

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60Hz
5007M	61014	105-130/ 208-285VAC



LC200 SERIES 2 ZONES LIGHTING CONTROL

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60Hz	NO. OF ZONES	OUTPUT CONTACTS
LC200	82111	120/240 277VAC	2	SPDT
LC200M	82113	120/240 277VAC	2	SPDT



ZONE 2: DUSK TO TIME OFF

OUTDOOR SIGNS, CANOPY, WALKWAYS & PARKING LOTS

5737 SERIES PHOTO TIMERS

CATALOG NO.	UPC CODE	VOLTAGE 50-60Hz
5737TZ	62010	105-305VAC
5737TM	62009	105-305VAC



DGLC SERIES 7 DAY LIGHTING CONTROL TIME SWITCH

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60 Hz	NO. OF CHANNELS	OUTPUT CONTACTS
DGLC100A-NC	82223	120-277VAC	1	DPDT
DGLC200A-NC	82213	120-277VAC	2	SPDT

Multi-zone control can be configured for indoor zone B or outdoor zone 1 and zone 2



DLC400BP 4 ZONE LIGHTING CONTROL TIME SWITCH

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60 Hz	NO. OF CHANNELS	OUTPUT CONTACTS
DLC400BP	82191	120/208- 240/277VAC	4	SPDT
USB-MMP	82196	Memory Module Programmer		Includes Software
SSA200R-24	14015	24VAC 24VDC		SPDT

Multi-zone control can be configured for indoor zone B or outdoor zone 1, zone 2 and zone 3



Model EPC2
supplied with unit.

EXTERIOR LIGHTING ZONES

ZONE 2: DUSK TO TIME OFF OUTDOOR SIGNS, CANOPY, WALKWAYS & PARKING LOTS

ELC SERIES 7 DAY LIGHTING CONTROL TIME SWITCH				
CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60 Hz	NO. OF CHANNELS	OUTPUT CONTACTS
ELC71PC/120*	82517	120VAC	1	DPDT
ELC71PC/277*	82519	277VAC	1	DPDT
ELC72PC/120*	82520	120VAC	2	SPDT
ELC72PC/277*	82522	277VAC	2	SPDT



* Order EPC-EL Photo Sensor Separately

ELC SERIES ENERGY AND LIGHTING CONTROL 4, 8 OR 12 ZONE				
CATALOG NO.	UPC CODE	TIMER SUPPLY 50/60Hz	NO. OF CHANNELS	OUTPUT CONTACTS
ELC74*	82523	24/120/208 240/277VAC	4	SPDT
ELC78*	82524	24/120/208 240/277VAC	8	SPDT
ELC712*	82525	24/120/208 240/277VAC	12	SPDT
EPC-LC	82233	Accessory Photo Sensor		



* Order EPC-EL Photo Sensor Separately

Multi-zone control can be configured for indoor zone B or outdoor zone 1, zone 2 and zone 3

ZONE 3: ARCHITECTURAL BUILDING FACADE, LANDSCAPE & SIGNAGE

EWZ SERIES MULTIPURPOSE CONTROL, 7 DAY TIME SWITCH				
CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60Hz	NO. OF CHANNELS	OUTPUT DRY CONTACTS
EWZ101	82470	120-277VAC	1	SPST
EWZ103	82473	120-277VAC	1	DPST
EWZ120	82471	120-277VAC	1	SPDT
EWZ201	82472	120-277VAC	2	SPST



DZS SERIES MULTIPURPOSE CONTROL, ADVANCED TIME SWITCH				
CATALOG NO.	UPC CODE	TIMER SUPPLY 50/60Hz	NO. OF CHANNELS	DRY CONTACTS (UNPOWERED)
DZS100BP	82182	120/208 240/277VAC	1	DPDT
DZS200BP	82183	120/208 240/277VAC	2	SPDT
DZS400BP	82184	120/208 240/277VAC	4	SPDT
USB-MMP	82196		Memory Module Programmer	Includes software



SS700Z SERIES IN-WALL 7 DAY ASTRO TIMER SWITCH				
CATALOG NO.	UPC CODE	INPUT SUPPLY	COLOR	OUTPUT CONTACTS
SS700Z	14019	120/277VAC	White	SPST
SS700ZA	14020	120/277VAC	Light Almond	SPST



INTERIOR LIGHTING ZONES

The first way to save energy begins with eliminating lighting when it isn't needed. As with exterior lighting, an efficient design matches controls to the typical use of the area.

ZONE A: SMALL SPACES

Small Spaces, Meeting Rooms, Restrooms, Storage Spaces: Occupancy Sensors, Interval Timers

The first zone includes small spaces such as offices, restrooms and storage areas – places where people may not occupy the space continuously. Individual wall switch replacement provides low cost installation, with occupancy sensors and interval timers as the best solution. In the event that wall switches provide proper coverage for the occupancy sensor, ceiling mounted options are available.

ZONE B: LARGE SPACES

Open Office Spaces, Hallways, and Warehouses: Time of Day with Override, Occupancy Sensors

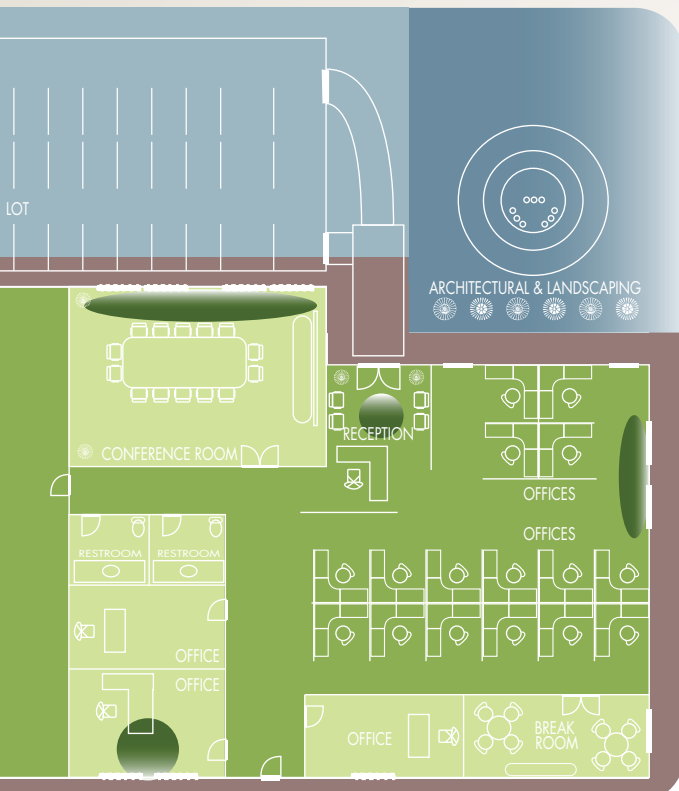
The second zone is for common areas, such as hallways, reception spaces or large spaces for open offices. These places are commonly controlled with time-of-day devices and must include an after-hours override. A conveniently placed switch should provide a limited override with a maximum length of two or four hours,* or occupancy sensors can be used to ensure that lights are shut off when people have left the building.

* Energy codes vary on the stated maximum time, but shorter times can give more energy savings.

ZONE C: DAYLIGHT HARVESTING

Large or Small Spaces with Natural Light: Light Sensors, Light Sensors with Occupancy, Astronomic Timers.

A third zone that uses daylighting control can be added to either of the first two zones. Light sensors can shut off a portion of the lighting when windows or skylights contribute sufficient natural light to the area. This "harvesting" of light is an excellent, green way to conserve energy.



INTERIOR LIGHTING ZONES


ZONE A: SMALL SPACES

OFFICES, SMALL CONFERENCE ROOMS & BREAK ROOMS

OSWS SERIES

PIR SENSOR, DECORATOR STYLE, OCCUPANCY SENSOR


CATALOG NO.	UPC CODE	DESCRIPTION	OUTPUT CONTACTS
OSWS9P-120	82077	PIR in-line wall switch	120VAC
OSWS9P-277	82078	PIR in-line wall switch	277VAC
OSWS9PD	82079	PIR in-line wall switch with ambient light sensor	120/277VAC
OSWS9PDM	82080	PIR in-line wall switch manually activated	120/277VAC



SSA SERIES

DIGITAL AUTO OFF, IN-WALL TIME SWITCH, FLASH WARNING BEFORE OFF

CATALOG NO.	UPC CODE	INPUT SUPPLY	TIME SETTINGS	OUTPUT CONTACTS
SSA100	14010	120/277 VAC	Minutes: 5, 15, 30 Hours: 1, 3, 6, 9, 12	SPST
SSA200	14011	120/277 VAC	Minutes: 10, 20, 40 Hours: 1, 1½, 2, 4, 8	SPST
SSA100R-24	14014	24VAC/24 VDC	Minutes: 5, 15, 30 Hours: 1, 3, 6, 9, 12	SPDT
SSA200R-24	14015	24VAC/24 VDC	Minutes: 10, 20, 40 Hours: 1, 1½, 2, 4, 8	SPDT



D SERIES

ELECTRONIC AUTO OFF, IN-WALL TIME SWITCH


CATALOG NO.	UPC CODE	INPUT SUPPLY 60Hz	COLOR	TIME SETTINGS (MINUTES)
D1060M	14025	120VAC	Ivory	10, 20, 30, 60
D1060LA	14024	120VAC	Light Almond	10, 20, 30, 60
D1060MW	14025	120VAC	White	10, 20, 30, 60



OSC5PL

PIR SENSOR, CEILING MOUNTING, OCCUPANCY SENSORS

CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE	COLOR
OSC5PL	82083	24VDC	500 FT	White
TRP-U	82030	120/277VAC		Power Pack
LCS115M	82082			Accessory Override Switch




ZONE B: LARGE SPACES

OPEN OFFICE SPACES, CLASSROOMS, HALLWAYS, & WAREHOUSES

OSC SERIES

ULTRASONIC, CEILING MOUNTING, OCCUPANCY SENSOR


CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE (SQ. FT.)	COLOR
OSC5U	82072	24VDC	500	White
OSC10U	82073	24VDC	1000	White
OSC20U	82074	24VDC	2000	White
TRP-U	82030	120/277VAC		Power Pack



OSC20UP

DUAL TECHNOLOGY, OCCUPANCY SENSOR

CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE	COLOR
OSC20UP	82075	24VDC	2000 ft US 1500 ft PIR	White
TRP-U	82030	120/277VAC		Power Pack



OSC12PL

PIR SENSOR, CEILING MOUNT, OCCUPANCY SENSOR


CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE	COLOR
OSC12PL	82081	24VDC	1200 ft	White
TRP-U	82030	120/277VAC		Power Pack
LCS115M	82082			Accessory Override Switch



OSC15PLS

PIR SENSOR, AMBIENT LIGHTING, OCCUPANCY SENSOR

CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE (FEET)	COLOR
OSC15PLS	82076	120-347VAC	1200	White



INTERIOR LIGHTING ZONES

ZONE B: LARGE SPACES

OPEN OFFICE SPACES, CLASSROOMS, HALLWAYS,
& WAREHOUSES

ZONE C: DAYLIGHT HARVESTING

CLASSROOMS, CONFERENCE ROOMS,
LOBBIES & WAREHOUSES

ELC SERIES ENERGY AND LIGHTING CONTROL 4, 8 OR 12 ZONE

CATALOG NO.	UPC CODE	TIMER SUPPLY 50/60Hz	NO. OF CHANNELS	OUTPUT CONTACTS
ELC71PC/120	82517	120VAC	1	DPDT
ELC71PC/277	82519	277VAC	1	DPDT
ELC72PC/120	82520	120VAC	2	SPDT
ELC72PC/277	82522	277VAC	2	SPDT
ELC74	82523	24/120/208 240/277VAC	4	SPDT
ELC78	82524	24/120/208 240/277VAC	8	SPDT
ELC712	82525	24/120/208 240/277VAC	12	SPDT
LCS115M	82082	Accessory Override Switch		SPST



Multi-zone control can be configured for indoor zone B or outdoor zone 1, zone 2 and zone 3

DLC400BP 4 ZONE LIGHTING CONTROL TIME SWITCH

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60 Hz	NO. OF CHANNELS	OUTPUT CONTACTS
DLC400BP	82191	120/208- 240/277VAC	4	SPDT
USB-MMP	82196	Memory Module Programmer	Includes Software	
SSA200R-24	14015	24VAC 24VDC	Accessory Override switch	SPDT



Multi-zone control can be configured for indoor zone B or outdoor zone 1, zone 2 and zone 3

DGU and DGLC SERIES 7 DAY LIGHTING CONTROL TIME SWITCH

CATALOG NO.	UPC CODE	INPUT SUPPLY 50/60 Hz	NO. OF CHANNELS	OUTPUT CONTACTS
DGU100A-Y	82211	120-277VAC	1	DPDT
DGLC200A-NC	82213	120-277VAC	2	SPDT
A502HW	15118	120-277VAC	Accessory Override switch	SPST



Multi-zone control can be configured for indoor zone B or outdoor zone 1 and zone 2

OSC15PLS PIR SENSOR, AMBIENT LIGHTING, OCCUPANCY SENSOR

CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE (FEET)	COLOR
OSC15PLS	82076	120-347VAC	1200	White



OSC-PL SERIES PIR SENSOR, AMBIENT LIGHTING, OCCUPANCY SENSOR

CATALOG NO.	UPC CODE	INPUT SUPPLY	COVERAGE	COLOR
OSC5PL	82083	24VDC	500 FT	White
OSC12PL	82081	24VDC	1200 FT	White
TRP-U	82030	120/277VAC		Power Pack
LCS115M	82082			Accessory Override Switch



ELS INDOOR LIGHT LEVEL, ELECTRONIC SENSOR

CATALOG NO.	UPC CODE	INPUT SUPPLY	DESCRIPTION
ELS-1	82049	24VDC	Indoor Daylight Sensor
TRP-U	82030	120/277VAC	Power Pack



CIRCUIT CONTROL

5400 SERIES 6000 WATT CONTACTORS WITH TURN-LOCK PHOTOCONTROL

CATALOG NO.	UPC CODE	INCLUDES MODEL	INPUT VOLTAGE	CONTACT RATING PER POLE	SWITCH
5403	60009	5021M	105-130VAC	3000W	DPST
5404	60010	5024M	208-240VAC	3000W	DPST
5404-3	60011	5024M	277VAC	3000W	DPST
5420	60014	5021M	105-130VAC	3000W	SPDT



5401 SERIES INCREASED AMP & VOLTAGE SWITCHING, 40 AMP CONTACTORS

CATALOG NO.	UPC CODE	COIL VOLTS	NO. OF CONTACTORS	OUTPUT CONTACTS
5401	81021	120	1	3PST
5441	81022	120	4	3PST



SMC SERIES MOMENTARY CONTACT ADAPTER

CATALOG NO.	UPC CODE	INPUT SUPPLY (VAC) 50/60Hz	OUTPUT CONTACTS
SMC3D	52011	120	SPDT Momentary



LD SERIES EXTENDED LIGHTING CONTROL, DELAY TIME SWITCH

CATALOG NO.	UPC CODE	INPUT SUPPLY (VAC) 50/60 Hz	OUTPUT CONTACTS	ENCLOSURE TYPE
LDS-A	81026	120/208-240/277	SPDT	Metal Indoor NEMA 1
LDS	81025	120/208-240/277	SPDT	Mechanism
LDSH-A	81031	120/208-240/277	SPDT	Metal Indoor NEMA 1
LDSH	81028	120/208-240/277	SPDT	Mechanism



MMP MEMORY MODULE PROGRAMMER, PC-BASED

CATALOG NO.	UPC CODE	PROGRAM BASE	
USB-MMP	82196	Memory Module Programmer	Software Included

