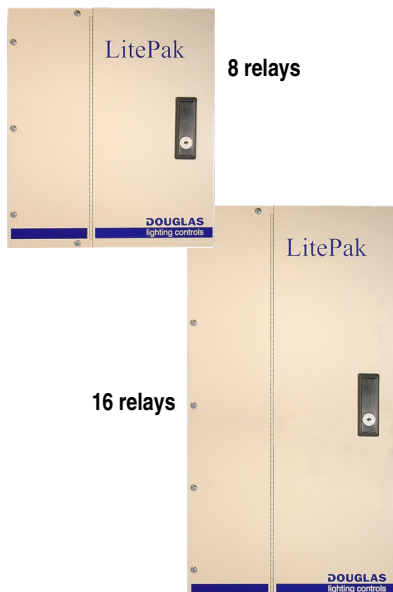
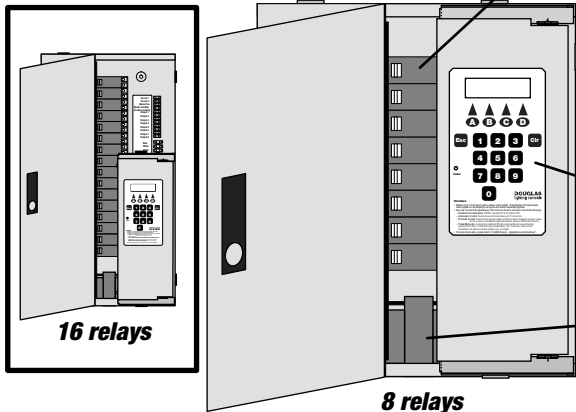


	<b>PART No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>
	<b>120/277</b> WPAK-33518-S* 8-relay Control Panel WPAK16-3351-S* 16-relay Control Panel WPAK-33018-S* Expansion Panel	<ul style="list-style-type: none"> <li>All purpose panels suitable for controlling all types of lighting loads including HID ballasts and lamps. Each panel has an 8 output controller and 8 or 16 HID relays. If needed, use an Expansion Panel to increase capacity.</li> <li>LitePak panels are equipped with a controller unit that uses a self-prompting graphical LCD display and keypad. Several features are available including: time scheduling, astronomic, flick warn and time-out.</li> <li>Optional WPS-5527K photo sensor permits the setting of precise numeric light levels for each output if desired.</li> <li>Remote switch stations can be connected to permit easy user override. Indicating, non-indicating and keyed switches are available.</li> </ul>	<p><b>LitePak Panel Ratings</b></p> <ul style="list-style-type: none"> <li>LitePak panels use Douglas 2wire HID relays rated for all types of lighting loads.</li> <li>120/277V Panels contain 8 or 16 relays. Rating: 20A @ 120/277V UL 20A @ 120/347V CSA Max conductor size: 12 AWG</li> <li>277/480V panels contain 4 or 8, 2pole relays. Rating: 20A @ 120/277/480V UL 20A @ 120/277/347V CSA Max conductor size: 10 AWG</li> <li>Power supply: 120/277V Transformer, Class 2, UL 120/347V Transformer, Class 2, CSA</li> </ul> <p><b>LitePak Controller Module</b></p> <ul style="list-style-type: none"> <li>8 time and/or photo controlled outputs, each connected to a relay permitting each relay to have a unique program. Up to 4 relays can be controlled by an output to share the same program.</li> </ul> <p><b>Programming</b></p> <ul style="list-style-type: none"> <li>Membrane key pad with LCD display graphic. Built-in prompts to guide users.</li> <li>Any output can be time, astro, photo controlled or combination of time and photo/astro controlled.</li> <li>Up to 900 events per week.</li> <li>Set any output schedule to run on any week day (Su-Mo-Tu-W-Th-F-Sa) or any specific date or dates (holidays).</li> <li>The controller's memory and time are not lost when power fails. Programs are held indefinitely and time is held for a minimum of 72 hours.</li> </ul> <p><b>Sensor &amp; Switch Options</b></p> <ul style="list-style-type: none"> <li>WPS-5527K Remote Photo Sensor. Range: 0 to 6,500 fc (0-65,000 lux), ±5%; Using sensor, any output can be set to switch at a specific light level. (eg1: ON 5fc; OFF 15c Dusk-to-Dawn) (eg2: ON 2000fc; OFF 4000fc Skylight)</li> <li>For remote switching, use any model of Douglas 2wire relay switch.</li> </ul> <p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Indoors, stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity.</li> <li>Ambient operating temperature: +15° to +120°F (-10° to +50°C).</li> </ul>
	<b>120/347</b> WPAK-33318-S* 8-relay Control Panel WPAK16-3331-S* 16-relay Control Panel WPAK-33018-S* Expansion Panel		
	<b>277/480</b> WPAK-33524-S* Four 2pole-Relay Panel WPAK16-3352-S* Eight 2pole-Relay Panel WPAK-33024-S* Expansion Panel		
	* -S = Surface Cover -F = Flush Cover		

**LitePak Panel (hinged cover open)**

- Cover latch can be locked if desired.
- Open cover to access control module or manual switching levers built into relays.



**8 or 16 Douglas 2wire HID Relays**

Suitable for all types of lighting loads including HID. Relays have a manual control lever built in and are latching. Thus they will retain state (ON or OFF) even if the controller module is disconnected. This feature permits easy testing during installation and provides a guaranteed override provision for the occupant.

**Controller Module**

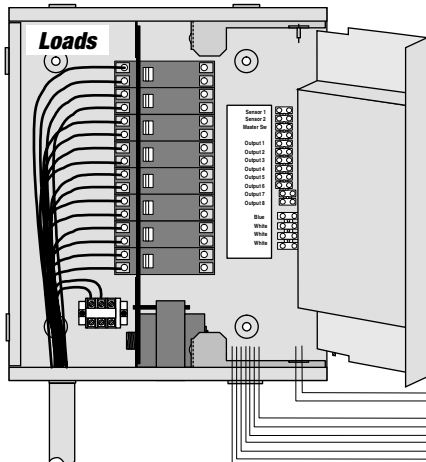
LCD display and membrane keypad used to view/edit settings and schedules. Eight outputs, each has a unique schedule.

**24V Transformer**

120/277 V primary, 24V sec @ 75VA Class 2 control transformer.

**LitePak Panel (cover removed, controller door open)**

- Remove cover to access line voltage circuits.

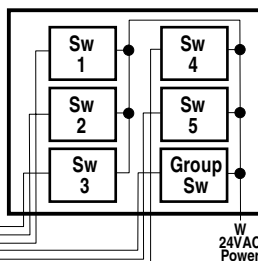


**Optional Remote Photo Sensor**

Range: 0 to 6,500 fcandles (±5%). Each output can have a unique setting. If sensor not installed, use astronomic function for dusk-to-dawn applications.

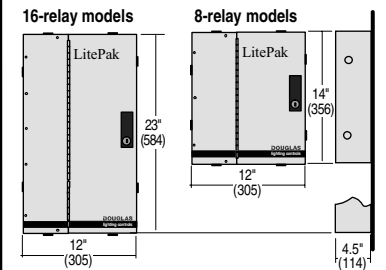
**Optional Remote Switches**

Connect standard Douglas switches direct to relays for remote override. Group switch input on controller can switch some or all of the outputs.



**DIMENSIONS & MOUNTING**

- Indoor applications only. Surface mount Nema 1 Enclosure.
- Remove cover to access 1/4" mounting holes and attach to wall.



## CONNECTIONS

### Stand Alone Panel

- Install LitePak panel near breaker panel and connect up to eight circuits (for 8-relay models) or sixteen circuits (for 16-relay models) to the panel (20A @ 120/277V lighting load rated relays). The largest wire size that can be used is 10 AWG.
- LitePak panels are pre-wired so that each relay (for 8-relay models), or a set of 2 adjoining relays (for 16-relay models) is connected to one of the 8 outputs of the controller. In this configuration, each relay, or relay pair, can have its own program. In applications where several relays are to be controlled by the same program, connect the relay's red control wires to a single output. Up to 4 relays can be controlled by an output of the controller.
- The LitePak panel permits manual override of the relays by:
  - 1) The membrane keypad of the controller.
  - 2) Manual on/off levers built into the relays.
- Use the keypad and interactive graphic display menus to enter, view and edit programs. In most cases the instruction manual should not be necessary to make simple adjustments to schedules, light levels and time settings.

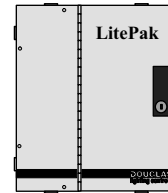
### Optional Remote Switching

- If accessing the LitePak panel for override switching is inconvenient, install a remote switch station convenient to the occupants.
- All Douglas 2 wire relay switches are compatible. Indicating, non-indicating and key operated switches are available. Up to 3 switches can be installed in a wall box to permit compact stations. Off-white plastic and stainless steel cover plates are available.
- Individual Switching:  
Connect the red control wire from the switch to the relay. The switch is connected in parallel to the controller output. Several switches can be installed at the same or multiple locations as required.
- Group Switching:  
The LitePak controller has one group switch input that can be used to switch all or some of the outputs of the controller.

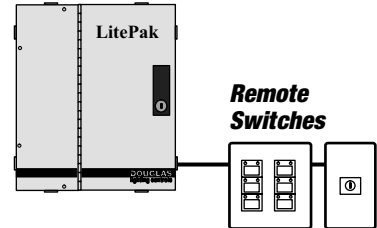
### Astronomic Function and Photocell Option

- The LitePak controller unit has an astronomic function for dusk-to-dawn lighting control applications. The latitudes and longitudes for most North American cities are listed in the manual. This setting is necessary for the Astronomic function to work properly.
- The astro function permits offsets of up to 180 minutes from the calculated time of sunset and sunrise. Thus, lights can be switched before or after sunset and sunrise if desired.
- The astro function can also be combined with the time function to permit lights to be switched on at sunset, off at a later hour, on at an early hour and off after sunrise.
- Connecting a WPS-5527K photo sensor (optional) to the LitePak controller permits precise numeric settings for the ON and the OFF setpoints. Each output can have a unique setpoint.
- Care must be taken to install the sensor at a location that measures natural and not artificial light. Usually best results are obtained by pointing the sensor to the northern sky. Sensor range is from 0-6,500 footcandles. Lower settings (less than 100 footcandles) are used for dusk-to-dawn applications and higher settings are used for daylighting applications (Ex: skylights).

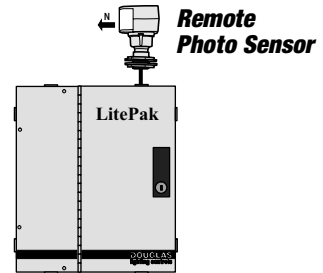
**Stand Alone Panel  
Built-in Overrides**



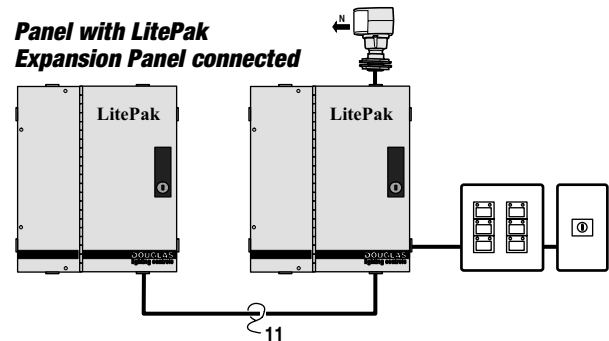
**Panel with Remote  
Switches Connected**



**Panel with Remote  
Photo Sensor**

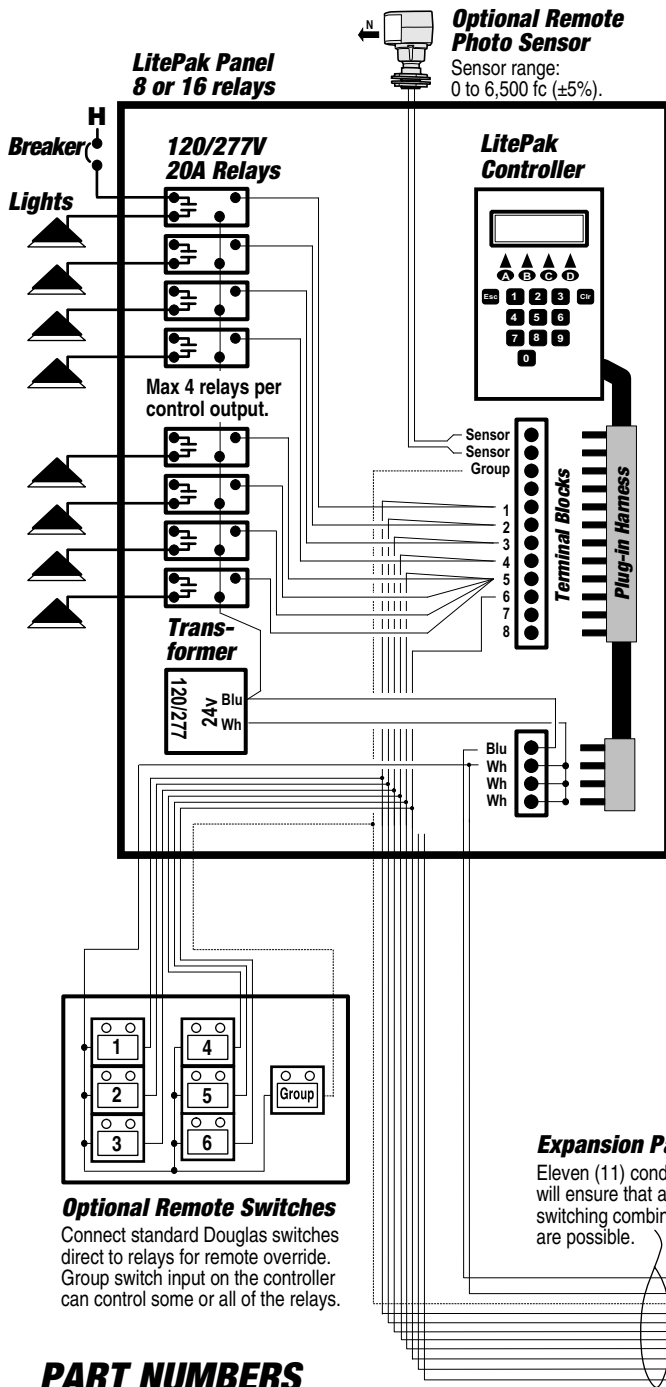


**Panel with LitePak  
Expansion Panel connected**



### Expansion Panel(s)

- To expand a system, install a LitePak expansion panel. Expansion panels have no controller or transformer installed. Only relays are installed and they are controlled by the panel housing the controller.
- An eleven (11) wire bus ensures that all connection combinations are possible.
- The outputs of a LitePak controller each can switch a maximum of 4 relays. There are 8 outputs, thus a theoretical maximum of 32 relays can be controlled. If more than 24 relays are to be controlled, it is recommended that full-sized, Douglas relay panels be considered. Panels of up to 72 relay capacity are available and they can be connected together to form even larger systems.



**Optional Remote Switches**

Connect standard Douglas switches direct to relays for remote override. Group switch input on the controller can control some or all of the relays.

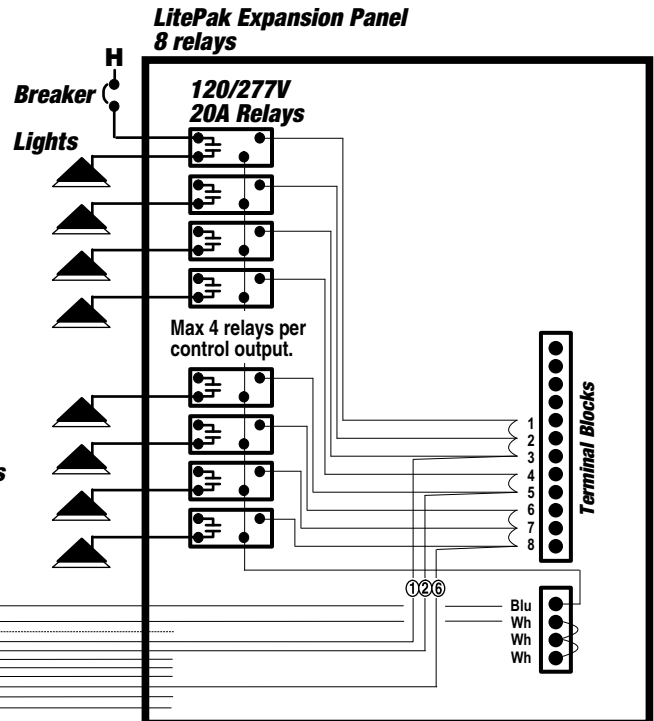
**Expansion Panel Bus**

Eleven (11) conductors will ensure that all switching combinations are possible.

**CONNECTIONS**

**Detailed Schematic Example**

- The schematic shows an 8-relay LitePak installation that utilizes all of the options possible. In addition, the switching groups are altered slightly from the standard factory connections to illustrate grouping several relays on an output.
- Relays 1,2,3 and 4 of the main panel are the factory connections. Relays 5,6,7 and 8 of the main panel are all connected to controller output #5 and they switch together.
- The expansion panel has 3 groups of relays that are switched by controller outputs #1, #2 and #6. Note that 11 conductors connect the expansion panel to the main panel even though all conductors are not used. This permits all possible switching combinations and permits switch stations to be connected to the expansion panel.
- The WPS-5527K photo sensor connects with 2 wires to the controller.
- The primary connection of the transformer (wiring not shown) is wired for a 277V connection. If connecting 120V, connect the 120V wire of the transformer to the terminal block.  
Caution: Do not connect 277V to the 120V wire of the transformer as the over voltage will damage the LitePak controller.



**PART NUMBERS**

WPAK-33518-S*	120/277V LitePak Panel c/w 8 relays & Controller Module
WPAK-33018-S*	LitePak Expansion Panel c/w ONLY 8 relays
WPAK-33318-S*	120/347V LitePak Panel c/w 8 relays & Controller Module
WPAK-33524-S*	277/480V LitePak Pnl c/w 4 - 2p Relays & Controller
WPAK-33024-S*	277/480V LitePak Expansion Panel c/w ONLY 4 - 2p Relays
WPAK16-3351-S*	120/277V LitePak Panel c/w 16 relays & Controller Module
WPAK16-3331-S*	120/347V LitePak Panel c/w 16 relays & Controller Module
WPAK16-3352-S*	277/480V LitePak Pnl c/w 8 - 2p Relays & Controller
WPAK16-3301-S*	LitePak Expansion Panel c/w ONLY 16 relays
WPS-5527K	Remote Photometric Sensor
Switches	All models of Douglas 2wire relay switches

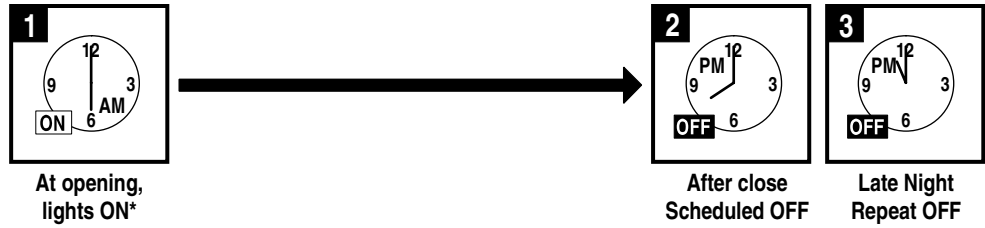
\* Suffix Definitions: -S = Surface Cover, -F = Flush Cover

**FEATURES & APPLICATIONS**

**Timed Schedules**

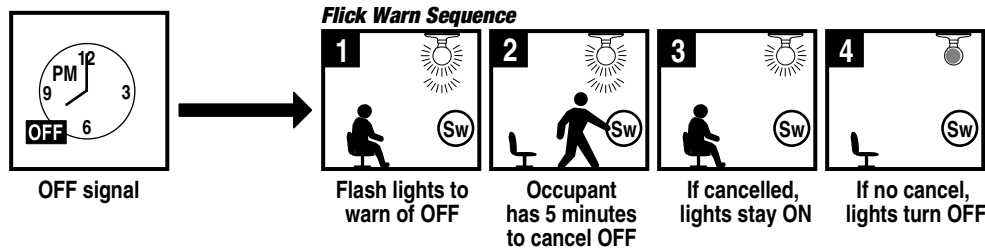
- Use timed schedules to automatically switch lights.
- Remote switches permit occupant ON/OFF switching.

\* If switches are installed, ON schedules should not be used, because the switches permit the lights to be turned ON only when needed. The OFF schedules ensure lights are eventually switched OFF.



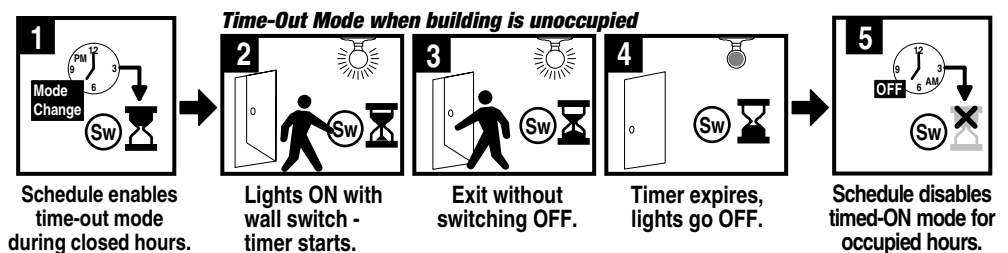
**Flick Warn**

- Flick warn feature is used to warn occupants that lights will be switched OFF in 5 minutes. Occupants can cancel the OFF by switching the relay again (with remote switch or override in panel).



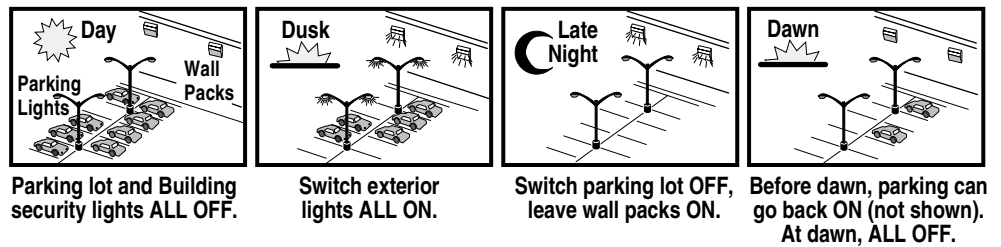
**Time-Out Mode**

- The time-out mode causes a controller output to start an internal timer when the relay is switched ON. Upon time expiry, the output switches the relay OFF.
- The time-out mode can be enabled and disabled with a time schedule. Thus, switches work normally during business hours and function with time-out mode during closed hours.



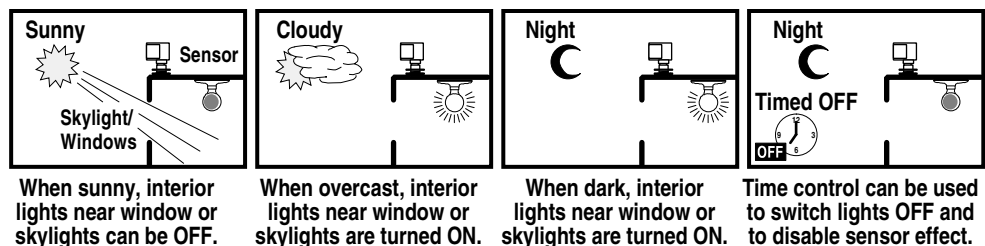
**Astronomical Control**

- With longitude, latitude, time zone and date, the controller calculates the sunset and sunrise times. An output can be programmed to switch at these calculated times.
- An offset time ( $\pm 180$  min) can be entered to cause the switching to occur sooner or later than actual sunset and sunrise.



**Photometric Control**

- Connecting WPS-5527K Photo Sensor to the LitePak controller permits digital entry of light levels. Range of sensor: 0-6,500 fcandles
- Each output of the controller can have unique ON and OFF set points for different requirements of a lighting group.



**Override Switching**

- To override circuits at the panel, use manual on/off levers built into relays.
- Install switch stations at locations convenient to occupants.
- To control individual circuits, connect switch direct to relay. To control all circuits, use group input on controller.

