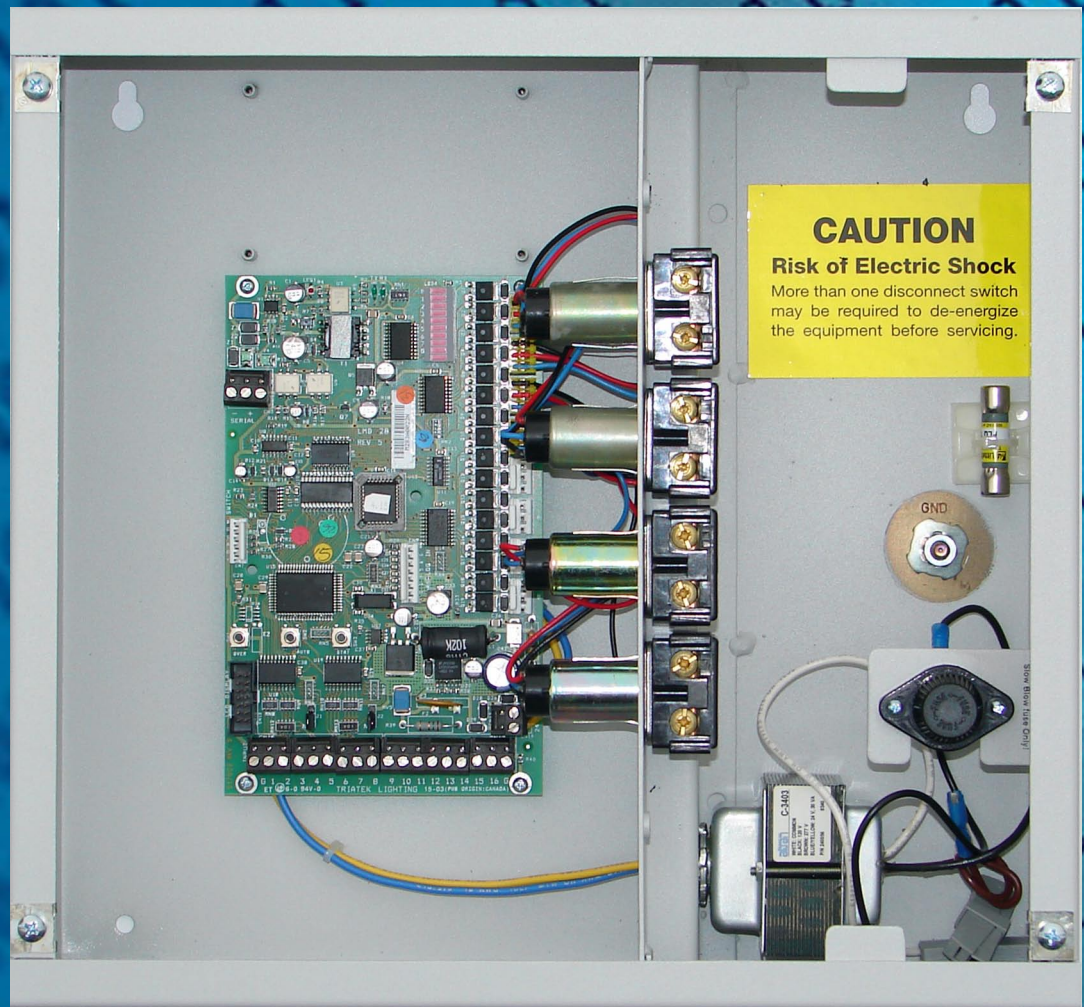


LUMISYS

BUILT FOR INTEGRATION

L28 Series

Installation Guide



ATTENTION

This section serves as a notice of the immediate or potential dangers involved when working with the equipment described throughout this manual. Any person involved in installation, maintenance, or service of the equipment should first carefully examine the equipment and read the instructions contained in this manual to ensure that personal and/or equipment injury is avoided.

The following safety messages are used throughout this manual to alert of immediate or potential danger to life or property:



Hint Indicates a tip or trick to help you.



Note Indicates an important note.



DANGER! Indicates an immediately hazardous situation which, if not avoided, will result in death or serious injury.



WARNING! Indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.



CAUTION: Indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury.

CAUTION: Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, can result in personal or property damage. Failure to comply with proper handling of the Lumisys products may void your warranty



In addition, this symbol may appear in the margin of specific portions of text as a safety reminder. Applicable instruction steps will be listed beneath the symbol.

Disclaimer

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designated to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Instructions contained in this user's guide should be performed only by qualified persons in accordance with local and national codes. Lumisys® Lighting and its affiliates assume no responsibility for any consequences related to the improper use of this manual.

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Panel Overview and Illustrations

Lumisys L-28 Series UL Listed, Mini Lighting Control Panel is designed to control lighting loads in small to medium sized buildings. This low cost unit provides the capability to reduce electrical utility costs by controlling high voltage lighting circuits via a two wire RS-485 network, maintained or momentary contacts from override switches, motion sensors or a touch-tone telephone. This unit is available in up to 8 relays and sixteen switch inputs. Outputs are rated at 277 volts (optional 347 volts for Canada), 20 amps

ENCLOSURE

The unit is comprised of a painted steel enclosure with a removable door. The door utilizes 1/4 turn screws for easy removal and mounting. The enclosure design provides the capability for either surface or flush mounting. A high voltage cover is provided to protect from accidental contact with the high voltage circuits. All high voltage is separated from low voltage by a barrier located between the two compartments.

CONTROLLER

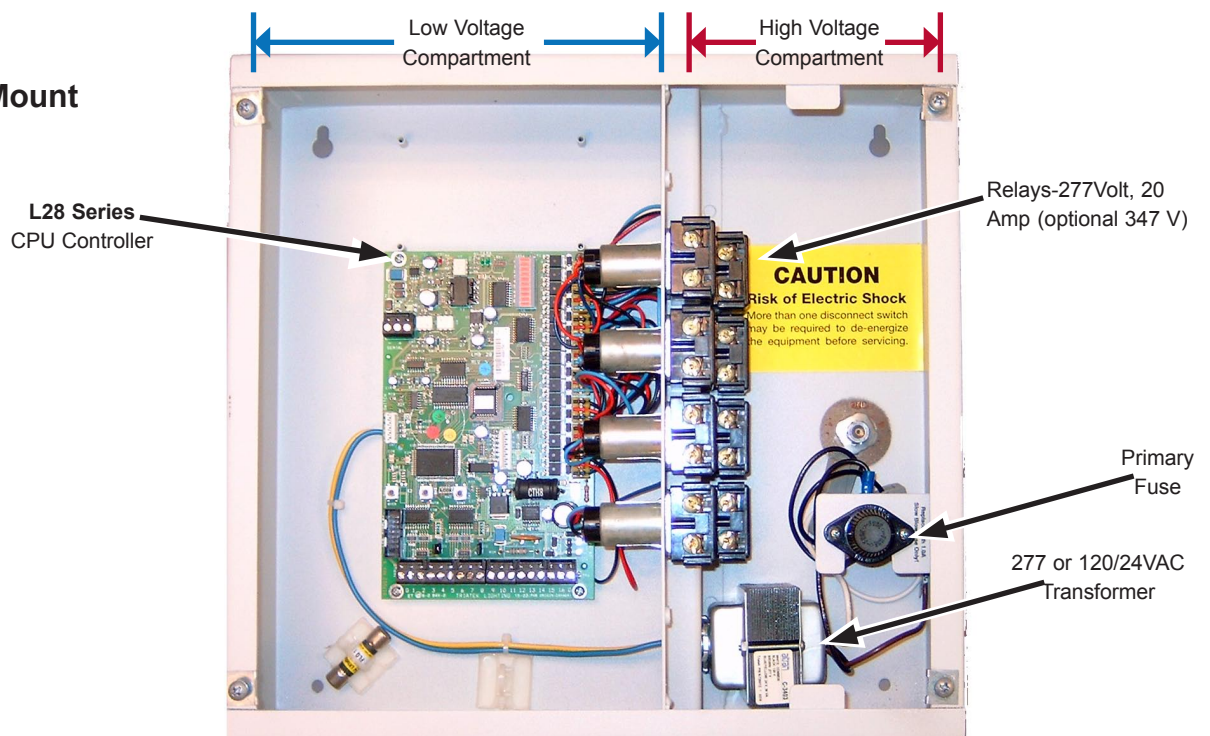
The L28 Series CPU is a microprocessor-based controller that provides all control functions, storage of parameters, connections to relays, connections to switch inputs, power supply input, manual override, RS-485 communication connections, and visual status indication.

RELAYS

The L28 Series provides a maximum of up to eight 277 volt, 20 amp relays for switching of lighting or other loads. The modular design of the L28 Series provides the capability to easily add relays up to the maximum. For installations in Canada, relays capable of 347 volts are available on special request. These relays are CSA approved.

Enclosure

Flush or Surface Mount



Panel Overview and Illustrations

POWER SUPPLY

The L28 Series provides the capability for either 120 or 277 volts AC supply power. A primary fuse and fuse holder are supplied as standard equipment.

RELAY OUTPUTS

Each relay is controlled by the L28 Series CPU. Eight connectors are provided along the upper right side and are numbered 1 through 8 for each respective relay. The relays are factory wired and tested at TRIAD prior to shipping. Since the relay connectors are removable they may come off during shipment so make sure they are properly seated after installation.

SWITCH INPUTS

The L28 Series CPU is capable of accepting up to sixteen switch inputs. Each input can be programmed for one of four types. The switch input types are momentary on, momentary off, momentary on/off and maintained. Each of the switch inputs can be set for normally open or normally closed contacts. Any switch input can be assigned to any of the units twelve possible zones. The switch inputs are located along the bottom edge of the L28 Series CPU.

ZONES

The unit provides the capability to group any of the relays into twelve separate zones. Each zone can have any combination of relays including just one relay or all relays. The same relay can be assigned to multiple zones if desired such as common area lighting.

POWER SUPPLY

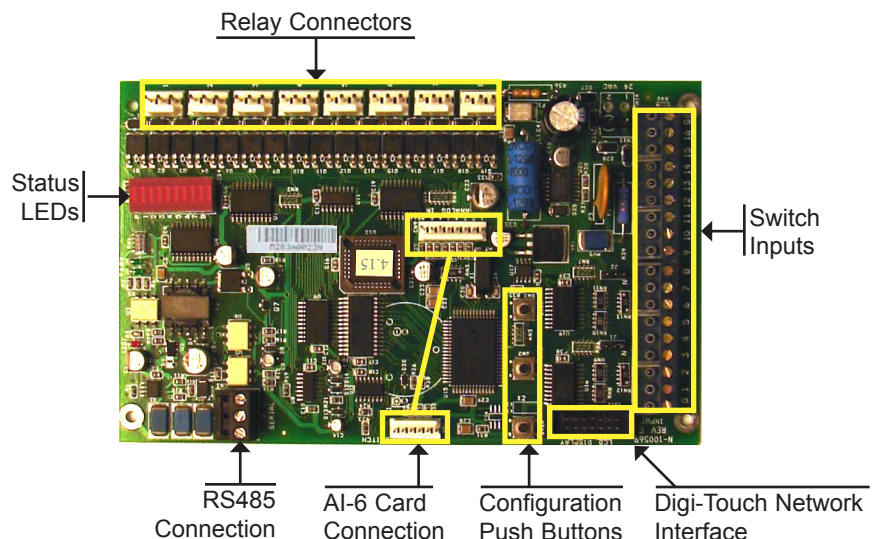
Power from the units transformer is factory connected to the power terminals labeled "P" and "G" located at the lower right corner of the L28 Series CPU. Since this connector is removable it may come off during shipment so make sure it is properly seated after installation.

RS-485 COMMUNICATION

Terminals marked "-" and "G" at the upper left corner of the L28 Series CPU are used for either networking the L28 Series CPU's or for connecting to a laptop computer or PC for panel programming.

LED's

LED's are provided to give local visual indication of each relays status. If the LED for a respective relay is on this indicates the relay is on. The LED labeled "P" will illuminate when power is applied to the unit. See the Feature Description section for a more detailed description of all LED indications.



Panel Mounting

Unpack the unit and check for any type of visible damage that may have occurred during shipment.

Before installing the **L28 Series** be sure to remove the **L28 Series** CPU from the enclosure. Store the **L28 Series** CPU in a safe location until the **L28 Series** enclosure installation is complete. Metal shavings can lodge between pins on integrated circuits causing a short which could result in damage to the unit.

Remove the **L28 Series** CPU from its enclosure by unscrewing the four mounting screws. Place these screws back in the standoffs that hold the **L28 Series** CPU to the enclosure so they will be easy to find when you are ready to mount the **L28 Series** CPU back into the enclosure. Secondly, pull off the power connector (this connector is a removable type, you will not need a screw driver to remove the wires, simply pull the connector off). Lastly, disconnect the relays connected to the **L28 Series** CPU by pulling each relay connector off the board (this connector is a removable type, simply pull the connector off). Once drilling for any conduit connections and mounting is complete, remove all shavings from the **L28 Series** enclosure. All wiring should be in accordance with local regulations and the National Electric Code.

Surface Mounting

The figure below illustrates the location of the unit's mounting holes. The top two mounting holes are keyhole shaped so you can slide the unit over mounting screws, avoiding the need to hold the unit while trying to secure the mounting screws. Use wall anchors capable of supporting up to 20 pounds.

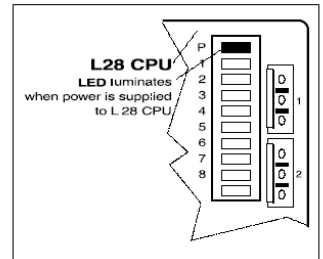
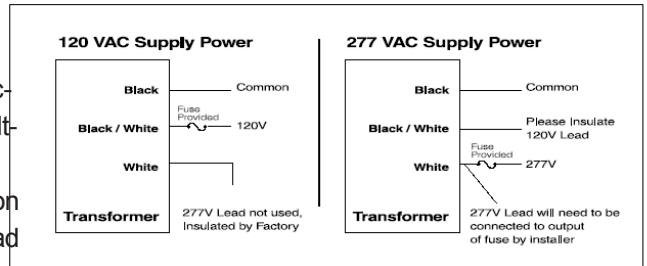
Flush Mounting

Secure the **L28 Series** enclosure between the wall studs. Be sure to allow for the thickness of the drywall so the units cover will mount flush on the finished wall. Use wall screws capable of supporting up to 20 pounds.

Replace the **L28 Series** CPU using the four mounting screws supplied. These screws should be in the standoffs if you followed the instructions when removing the **L28 Series** CPU. Next, connect the relays to the **L28 Series** CPU. Be sure to connect relay one to the connector marked "1", relay two to "2", until all relays are connected. The connectors for the relays are polarized to insure correct installation.

Power Supply Connections

The unit can be powered by either 120 or 277 VAC. A fuse and dual primary transformer are utilized to offer maximum flexibility during installation. This factory mounted transformer powers the L28 CPU, LEDs and associated low voltage coils on the relay. The unit is factory wired for 120VAC, however the unit can be powered by 277 VAC by disconnecting the 120VAC primary connection (quick connect) from the output of the fuse and connecting the white 277V lead (quick connect) as shown below. **WARNING:** Keep the unused lead (120V or 227V) insulated from other leads and case ground. Once the correct supply voltage is applied to the unit, the LED labeled "P" and a second LED located next to the RS-485 communication connector will illuminate. The secondary wires from the transformer are factory connected to input terminals "P" and "G" on the L28 CPU. This is a removable connector so be sure it is properly seated because it could be dislodged during shipment.



Panel Dimensions

Panel Enclosure Dimensions: ...13.5" Wide x 12.75" High x 4" Deep
Door Dimensions: 14.5" Wide x 13.75" High x 1/8" Deep

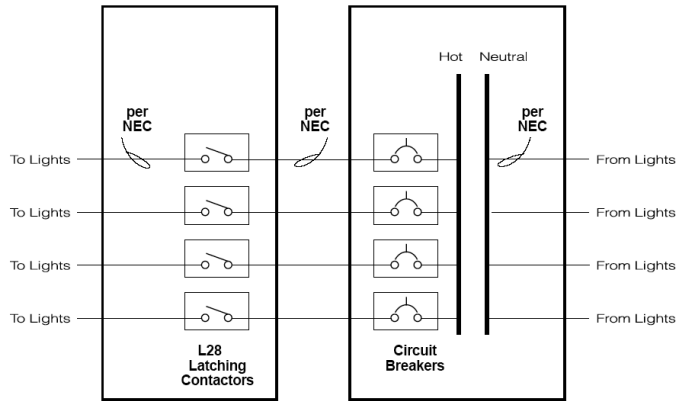
Certifications

Underwriters Laboratories.....UL 916
Canadian Standards Association Approved.....C22.2-205



High Voltage Connections

Below are typical wiring diagrams for the high voltage relays. These relays are mechanically latching so they hold their last commanded state after a power failure. All wiring should be in accordance with local regulations and the National Electric Code.



Switch Input Connections

Below are typical switch input wiring diagrams for the four different types of switch inputs. The momentary on/off input provides the capability to use one switch input for both on and off switching. The first time a momentary on/off switch is pressed the respective lights are turned on, the next time it is pressed the lights are turned off. This feature can eliminate the requirement for both a momentary on and off switch input as shown below in "Typical 2 Position Toggle Switch" Diagram. This momentary on/off switch input method is only recommended in areas where the switch is located in the zone or area being controlled so the user can see the lights from the switch location.

Maintained switch inputs are not recommended as override switches in the zones. The maintained switch inputs are generally utilized as control inputs from building automation or energy management systems. This provides the capability for a BAS or EMS to control the lighting when the **L28 Series** RS-485 Serial Communication feature is not implemented. The RS-485 Serial Communication feature is the most cost effective way to control the **L28 Series** from a BAS or EMS system. The RS-485 Communication feature provides the capability to control and monitor multiple **L28 Series**'s over a twisted pair wire. Contact Lumisys for a copy of its Lighting Control Protocol Guide to see if your BAS or EMS supplier can implement the RS-485 Communication feature.

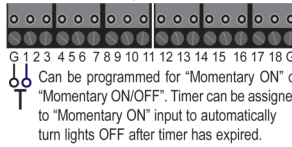
RS-485 Serial Communication Connections

Lumisys **L28 Series** can be networked with other **L28 Series**'s or **L26 Series**'s or **RCS-1000**'s. This network is a multi drop type and should be wired as shown below. The **L28 Series** serial communication can be checked by a technician in the field by pressing the "STAT" pushbutton on the **L28 Series** CPU. Once this pushbutton is depressed, LED number 8 on the LED bar chart will blink to indicate the **L28 Series** is in the serial communication status mode. LED 1 on = serial signal is received at this panel, LED 2 on = the end of a serial command is received at this panel, LED 3 on = the address of the serial command matches the address of this panel. LED 4 on = serial command checksum is correct, LED 5 = the serial command received at this panel is a legal command, LED 6 on = the serial command sent to this panel is executed. After sixty seconds the LED's will automatically go back to normal mode showing the status of each relay. You can return to the normal operating mode at any time by pressing the "AUTO" pushbutton on the **L28 Series** CPU.

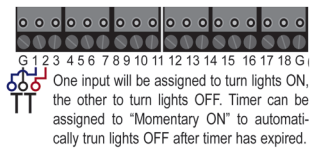
For networking applications connect the system's RS-485 "+" to terminal "+" on the **L28 Series** and RS-485 "-" to terminal "-" on the **L28 Series**.

For Windows™ or DOS programming applications the cable provided by Lumisys connects a serial port from a PC to terminals "-" and "G" on the **L28 Series**. The PC utilizes RS-232 for communication so the wiring is different than that of the RS-485 communication discussed above.

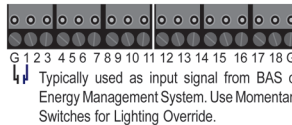
Typical "Momentary ON" Switch or "Momentary ON/OFF" Switch



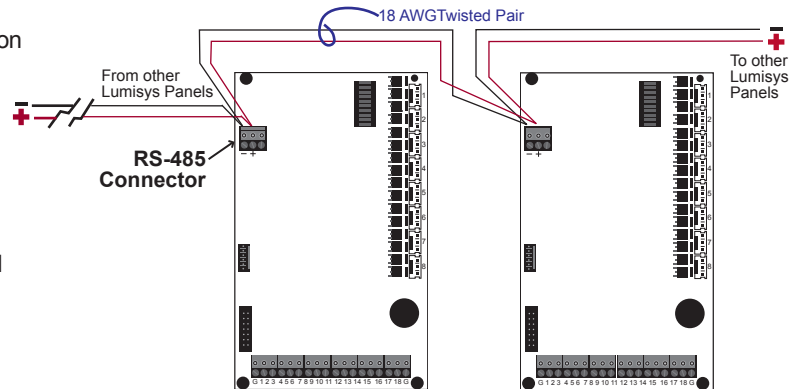
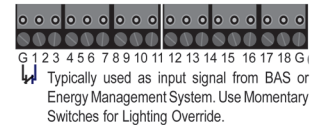
Typical "2 Position Toggle" Switch



Typical "Normally Open, Maintained" Switch



Typical "Normally Closed, Maintained" Switch



LED Display Feature

This feature provides local visual indication for power status, relay status, manual override status, panel address and serial communication status.

Status LED "P" indicates that power is supplied to the L28 Series CPU.

Status LED's 1-8 illuminate to indicate the status of relays 1-8 while in the normal operating mode.

During manual override operation LED 3 will blink. If LED 1 is illuminated while LED 3 is blinking then the relays are manually overridden to the ON state. If LED 2 is illuminated while LED 3 is blinking then the relays are manually overridden to the OFF state.

During the panel address setting mode LED's 1-8 will show the binary representation of the panel address from 1-255. If LED 1 is on, the panel address is 1, LED 2 on=address 2, LED 1&2 on=address 3, etc.

Lastly, when the "STAT" pushbutton on the L28 Series is pressed and the L28 Series RS-485 communication feature is being utilized to network multiple L28 Series's or for programming, the LED's provide the following information. LED 1 on = serial signal is received at this panel, LED 2 on = the end of a serial command is received at this panel, LED 3 on = the address of the serial command matches the address of this panel. LED 4 on = serial command checksum is correct, LED 5 = the serial command received at this panel is a legal command, LED 6 on = the serial command sent to this panel is executed.

Zone and Relay Assignment Feature

This software feature provides the capability to group any or all of the unit's relays to any of twelve different zones. Relays can be added or deleted from a zone at any time through software rather than hardwiring. Any time a zone is activated or deactivated, the assigned relays will be latched or unlatched respectively. Different zones can share the same relays such as common area lighting.

System Timer Feature

This software feature provides the capability to set up to three timers for momentary on switch inputs. The timers can be assigned to any of the unit's momentary inputs (not maintained) requiring the need to be automatically turned off after the time has expired. After a momentary contact is detected, the zone will be activated for the length of timer then will automatically turn off. The timers can be set between one second to eighteen hours in length. A typical requirement could be a user who wants to have a momentary switch in a zone turn the lights on for fifteen minutes each time it is pressed then flash and turn off after five minutes. One of the three timers will need to be set for fifteen minutes, then assigned to this momentary switch input on the L28 Series CPU and have the flash mode activated. (The five minutes will need to be set in the "ON-Time After Flash" section of this manual.

As the momentary switch input is detected by the L28 Series, the lights associated with it will turn on for fifteen minutes, flash and automatically turn off after five minutes. Each time the momentary input is pressed, the associated relays will latch for the associated timer setting.

Zone Priority Feature

This software feature provides the capability to assign one of four priorities to a zone with maintained input switches. Multiple inputs can be assigned to the same zone so an order of priority must be established. The four priorities are as follows:

No priority; last command controls the zone.

On Priority; If contact closure assigned to zone is on, zone must stay on, no other input can turn zone off when this input is on.

Off Priority; If contact closure assigned to zone is off, zone must stay off, no other input can turn zone on when this input is off.

On/Off Priority; Highest priority, zone can only be affected based on the status of this contact closure. If the contact is on or off the controlled zone must stay on or off, respectively.

Flash Mode Feature

This software feature provides the capability to flash the lights (latch/unlatch) associated with an input. The purpose of this feature is to warn occupants prior to turning the lights in their area off. The occupants will either need to exit the area or override the lights via a momentary switch or TRIATEK's telephone override system. The length of time the lights will be on after the flash and the length of the flash are discussed in their respective sections of this manual.

On-Time After Flash Warning Feature

This software feature provides the capability to set the length of time the lights will be on after the lights have been flashed. In order to activate this feature the input must be selected for flash warning. The On-Time After Flash feature can be set between ten seconds and sixty minutes in one second increments.

Flash Warning Feature

This software feature provides the capability to set the length of the flash off time during the Flash Warning. This time is factory set and should not be changed.

Relay Energize Time Feature

This software feature provides the capability to set the length of time the relay coil is energized by the unit. The value is factory set by TRIATEK. However, if you need to adjust this value, this feature provides the flexibility to set the time between twelve milliseconds and 1.6 seconds.

Caution should be taken when changing this factory set time. If the new time is too short it may not latch or unlatch the relay. If the new time is too long it may shorten the life of the relay.

Switch Input Polarity Feature

This software feature provides the capability to set each switch input for either normally open or normally closed contacts. A normally open selection will cause the relays to latch (lights on) when the switch input is shorted and unlatch (lights off) when it's open. A normally closed selection will cause the relays to latch (lights on) when the contact (input) is open and unlatch (lights off) when it's shorted.

The feature provides maximum flexibility because each switch input can be set for either polarity.

Programmable Input Feature

This software feature provides the flexibility to select any of the following options for each switch input.

The unit needs to know which of four switch input types are assigned to the selected switch input.

- 1) **Maintained Contact**,
- 2) **Momentary On Contact**; momentary switch closure will turn associated zone on
- 3) **Momentary Off Contact**; momentary switch closure will turn associated zone off, and
- 4) **Momentary Toggle contact**; First momentary switch closure will turn zone on, next switch closure will turn zone off, next will turn zone on, etc.

The unit needs to know which of the three momentary ON Timers are to be assigned to the selected momentary switch input (See **System Timer Feature** description for details).

Flash Warning Option

The unit needs to know if the inputs will be assigned to the Flash mode (See **Flash Mode Feature** and **Flash Warning Time Feature** description for details).

Manual Override Feature

This feature provides the capability to manually override from the L28 Series CPU all of its eight relays . This feature is ideal for the testing of the panel during installation or if the device controlling the panel fails. This is accomplished through the units pushbuttons and is described further in the “Manual Override” section of this manual.

RS-485 Serial Communication Feature

This software feature provides the capability to communicate with multiple L28 Series's over a twisted pair of wires. Using two wires to communicate eliminates the need to control zones from digital output (one for each zone) on building automation or energy management systems. Status of each zone is available over two wire with this feature eliminating the need for digital inputs (one for each zone) on building automation or energy management systems.

Relay Refresh Time Feature

This feature provides the capability to periodically check each input and refresh the L26 Series high voltage relay to the correct state. The refresh rate can be zero (0) for no refresh or three (3) to thirty (30) minutes in increments of one minute. If a L28 Series relay is off when it should be on, this feature, if activated, will try to turn the relay on every 3 to 30 minutes. This feature is ideal in areas with power dips. If the power dips while the L28 Series is energizing the relay coils this feature will refresh the relays to its commanded state.

Panel Reset Feature

This feature provides the capability to reset the L28 Series CPU should it become inoperative. If the L28 Series CPU is not responding, this feature, when activated, will cause the unit to re-load it's program and load it's program parameters from it's nonvolatile memory (EEprom). If this feature is activated any program changes that were not saved to nonvolatile memory prior to resetting the panel (EEprom) will be lost.

REQUEST COMMISSIONING

L28 Series Lighting Panel Programming Worksheet

L28 Series Panel # _____

Zone, Contractor & Flash

Zone 1				Zone 2				Zone 3				Zone 4			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5	6	7	8	5	6	7	8	5	6	7	8	5	6	7	8
Zone 5				Zone 6				Zone 7				Zone 8			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5	6	7	8	5	6	7	8	5	6	7	8	5	6	7	8
Zone 9				Zone 10				Zone 11				Zone 12			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5	6	7	8	5	6	7	8	5	6	7	8	5	6	7	8

Make a copy of this worksheet for each L28 Series you plan to program. Circle the relays to be enclosed in each respective zone.

Fill out the Programmable Input Definition Worksheet below. This section needs to be completed if you are utilizing switch inputs on the L28 Series.

Zones to Flash											
1	2	3	4	5	6	7	8	9	10	11	12

Input	Contact Type				Zone	Timer			Priorities				Flash	Polarity	Comments
	Main	On	Off	Toggle		NT	T1	T2	T3	NP	P1	P0			
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															

Programmable Input Definition

- Input = Input Number
- Main = Maintained Contact
- On = Momentary On Only
- Off = Momentary Off Only
- Toggle = Momentary On / Off
- Zone = Zone # assigned to Input
- NT = No Timer associated to Input
- T1 = Timer One assigned to Input
- T2 = Timer Two assigned to Input
- T3 = Timer Three assigned to Input
- NP = No Priority
- P1 = On Priority
- P0 = Off Priority
- 1/0 = On and Off Priority
- Flash = Zone in Flash Mode
- Polarity = N/C Normally Closed
- Timer 1 = ____ Timer 2 = ____ Timer 3 = ____
- ON Time after Flash = ____ Relay Refr. = ____

Lighting Panel # _____

Relay #	Zone#	Panelboard Circuit #	Low Voltage Switch #	Load Location / Description
1				
2				
3				
4				
5				
6				
7				
8				

Fill out this this form and place in the plastic jacket inside the L28 Series door.

This section provides information for programming Lumisys LIGHTING's L28 Series Lighting Control Panel. Programming will require Lumisys LP28-PK Programmers Kit and a PC or laptop computer. To install the LP28-PK Programmers Kit on your PC or laptop follow the instructions accompanying the LP28-PK CD. After you have installed LP28-PK follow the instructions below to set the various parameters.

1 Select this box to set the panel address of the L28 Series you wish to program. Your choices range from 1 to 255 in increments on 1.

2 This box selects the length of time the relays (lights) will be on after the flash warning has occurred. Your choices range from ten seconds to sixty minutes in one second increments.

3 This box selects the length of time the relays (lights) will be off during the Flash Warning. This feature is factory set for 0.5 seconds and should not need to be changed. Your choices range from 0.5 seconds to 2.0 seconds in 0.1 second increments.

4 Momentary on switch inputs can be assigned to one of three timers. These timers are used to insure the relays (lights) automatically turn off after the timer has expired. Your choices for each timer range from zero minutes to eighteen hours in one minute increments.

5 Relay refresh rate sets frequency at which the L28 Series relays are refreshed to the commanded state. This feature can be set to off for no relay refresh, to refresh every three to thirty minutes in increments on one minute.

6 Energizer Duration is the length of time the relay coil is pulsed. This feature is factory set at 0.072 seconds. Changing this could damage the units relays.

7 This column displays up to eight inputs at a time. Use the boxes labeled "Previous Input", Previous Page", First Page", "Next Input", Next Page" and "Last Page" to select the desired input you wish to program.

8 This box selects the zone you wish to assign to the input # to it's left. The box labeled "Zone Info" when selected provides the capability to set the relays and priorities associated with this zone. See the diagram to the right.

9 The Contact Type column provides the capability to select the switch input type. The choices include maintained, Momentary On, Momentary Off, and Momentary On/Off. The Momentary On/Off contact type will provide the capability to use a single momentary switch to turn the lights on, and when pressed again will turn the lights off.

10 This box provides the capability to assign one of the three timers or no timer to the input # selected. Your choices are 0 for no timer, or timer 1, timer 2 or timer 3.

11 This box provides the capability to select the Flash Warning feature for the input number selected so the relay (lights) will flash to prior to turning off. An "X" in this box selects the Flash Warning.

Zone #1 Default

8 Relays in Panel #
Input #1
Maintained Contact
Timer is Not Set
Flash Enabled
Normally Open

ON Priority
Serial Override Enabled

Cancel Changes Accept Changes

- 12 This feature provides the capability to select either normally open or normally closed for the input # selected.
- 13 "Open File" provides the capability to open various L28 Series program data files. Each L28 Series has its own filename.
- 14 "Save File" provides the capability to save the current information into a file name. Each L28 Series has its own filename.
- 15 "Read From Panel" provides the capability to read all the parameters from an L28 Series. This feature will read all the parameters from the panel number selected in the Panel Address box.
- 16 "Write to Panel" provides the capability to write all the parameters currently displayed to an L28 Series. This feature will write all the parameters to the panel number selected in the Panel Address box.
- 17 "Reset Panel" when selected will reset the panel number selected in the Panel Address box. Resetting will force the L28 Series selected to reload its parameters stored in its nonvolatile memory.
- 18 "Communications" displays current communication related information.
- 19 Displays the current file name of the file

Communications

Communications Port: COM 2

Communications Response Time: 0,14

Maximum Response Time: Seconds
1 Sec. Max.

Response Ratio: 27,40%

Response is Normal Factory Set

Maximum Retries:

Retry Pause Duration: Seconds

1 PANEL

Address 1 - 255

Total Inputs 1 - 16

Total Relays 8 - 8

2 FLASH

ON Time After MM:SS

Flash OFF Secs.

4 TIMERS (HH:MM)

Duration 1

Duration 2

Duration 3

5 RELAY

Refresh Rate MM:SS

Energizer Duration Secs.

7 Previous Input **9** Previous Page **10** First Page **19** XXXXXXXX.LPX **6**

Input #	ZONE #	Contact Type	Timer	Flash	Polarity
1	<input type="text" value="01"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
2	<input type="text" value="02"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
3	<input type="text" value="03"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
4	<input type="text" value="04"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
5	<input type="text" value="05"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
6	<input type="text" value="06"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
7	<input type="text" value="07"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open
8	<input type="text" value="08"/>	<input type="text" value="Zone Info"/>	<input type="text" value="Maintained"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/> Normally Open

Comm Port = COM1

Software Version: 1.08 Legal Command Count: 5

EPROM Status: OK Legal Command Address: 0X0006

EEPROM Status: OK Executed Command Count: 7

Checksum: 0x0004 Comm Response Time: 0.163 Secs

Response Ratio: 32.60% Response is Normal

Troubleshooting

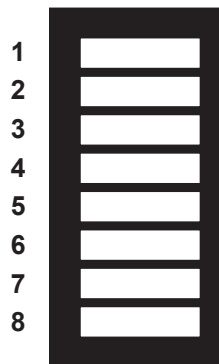
- LED's don't come on..... Check Fuse
Check Input & Output power to transformer
Press Programming button, unit times-out after 10 minutes

- Contactors don't turn ON or OFF Check quick connectors
Voltage too low - check transformer
Verify unit is powered up
Contactor is bad

- Input doesn't activate contactors Check to see if input is defined in software
Check status of input to CPU
Check to see if input is properly connected
Check to see that contactors are assigned to proper zone

- Unit locks up after power-up EPROM and EEPROM diagnostics found problem in either EPROM or EEPROM.
See V.k. for details of failure.

LED Indicators



The LED's indicate three basic modes which are "Normal Mode", "Manual Override Mode" and "Status Mode". The diagrams below illustrate each mode and what each LED indicates.

Normal Mode

Press "Auto" Pushbutton

- P = Power
- 1 = Relay 1 Status
- 2 = Relay 2 Status
- 3 = Relay 3 Status
- 4 = Relay 4 Status
- 5 = Relay 5 Status
- 6 = Relay 6 Status
- 7 = Relay 7 Status
- 8 = Relay 8 Status

LED ON = Relay ON
LED OFF = Relay OFF

Status Mode

Press "SMT" Pushbutton

- P = Power
- 1 = Serial Signal Received
- 2 =
- 3 =
- 4 =
- 5 =
- 6 =
- 7 =
- 8 =

Only used when RS485 communication is implemented

Override Mode

Press "ON" Pushbutton

- P = Power
- 1 = if ON Relay Manual ON
- 2 = if OFF Relay Manual OFF
- 3 = Blinks
- 4 = Not Used
- 5 = Not Used
- 6 = Not Used
- 7 = Not Used
- 8 = Not Used