

LIGHTING INVERTERS - #05

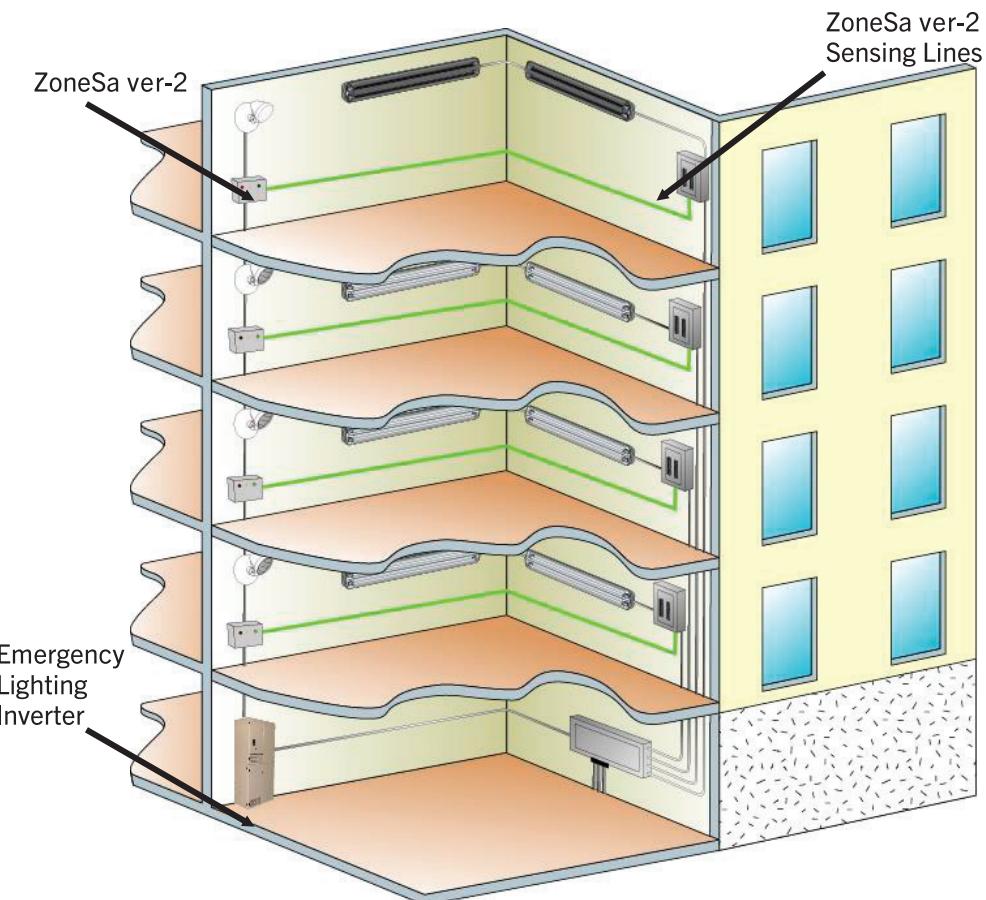
ZONE SENSING

General

Engineers and designers are always searching for innovations. Life safety egress lighting is no exception. The challenge is to provide maximum protection, but do so with an eye towards energy management. When designing emergency lighting for multi-floor or multi-use facilities, there must be a method of monitoring each zone independently, while still maintaining mandatory compliance using UL924 listed accessories. In doing so, utility expenses can be minimized.

Zone Sensing

Below is a diagram of a building which incorporates zone sensing as part of its design. As shown, an emergency lighting inverter supplies power to the emergency lighting fixtures which are “Normally Off”. In the event that there is a loss of power at a given zone lighting panel main, the power loss is detected and the ZoneSaver-2 applies emergency power from the lighting inverter to the “Normally Off” lighting circuit for the corresponding zone only, not the entire facility.



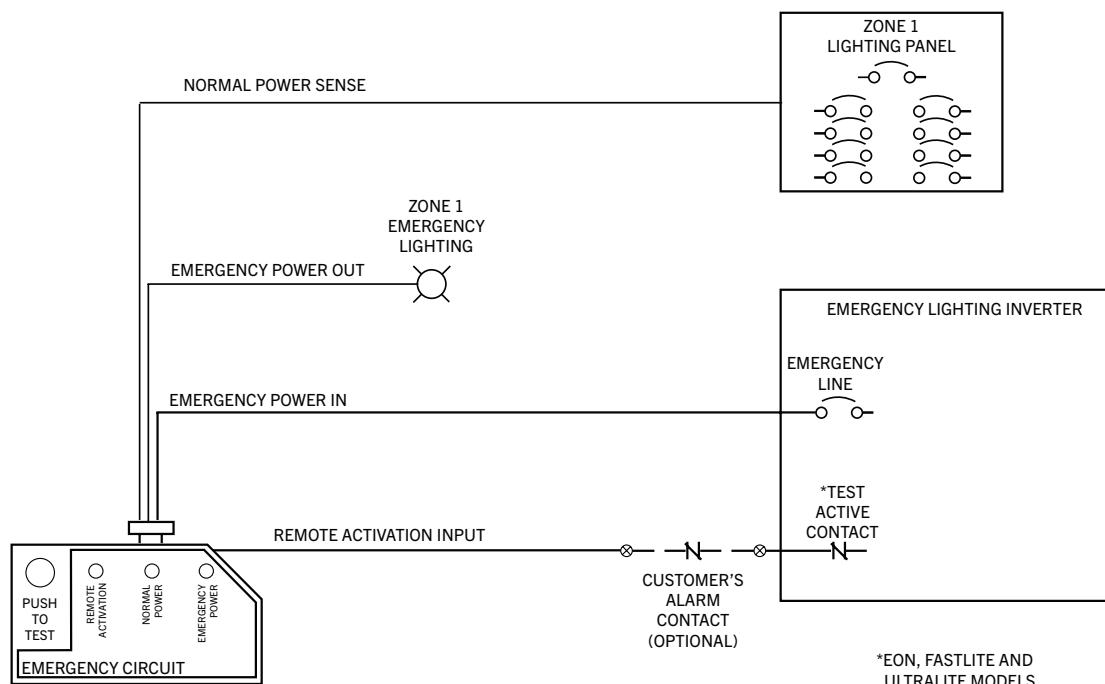
ZoneSaver-2

ZoneSaver-2 is a remotely installed option that allows for independent zone control of normally off emergency lighting.

In the event that there is a loss of power, inadequate voltage, or a main circuit breaker trip to a lighting panel in a specific zone,

ZoneSaver-2 ensures that the emergency egress fixtures will illuminate in that zone — without illuminating emergency egress fixtures in other zones. Such independent zone control saves money and eliminates emergency power use in unaffected areas. The ZoneSaver-2 delivers

emergency power to the affected zone only, which maximizes runtime, limits deep discharge cycling, and extends battery life. The drawing below indicates how ZoneSaver-2 can be applied in a zone sensing application.



“Test Active” feature is available on the EON, FastLITE, and UltraLITE models only.

When utility power is available at the lighting panel and Normal Power Sense input, the “Normal Power” light is illuminated indicating a normal condition, and the normally off (standby) emergency lights remain off. Note that when emergency power is available at the Emergency Power input, the “Emergency Power” light is illuminated.

When utility power is lost, the normal power light turns off and the normally off (standby) emergency lights are energized. Once power returns to the Normal Power Sense input, the emergency lights are shut off and the ZoneSaver-2 indicates a normal operating condition.

The “Remote Activation” light is illuminated under a normal condition, and turns off when the ZoneSaver-2 is activated by a signal from the customer’s alarm contact, or the emergency lighting inverter’s test active contact when performing an automatic “periodic” system test per

Note: The Remote Activation Input of up to five (5) ZoneSaver-2 units may be wired in parallel to the same alarm contact (500 ft. maximum wire length using #18 AWG).

NFPA 101. When activated, emergency power energizes the normally off (standby) emergency lights.

Note: The Remote Activation Input of up to five (5) ZoneSaver-2 units may be wired in parallel to the same alarm contact (500 ft. maximum wire length using #18 AWG).

An integral push-to-test button is also provided to manually test the emergency circuits.

Features

- Integral Push-To-Test Button
- LED Indication for Emergency and Normal Power
- Remote Activation with LED Indication
- Zero Cross Switching for Reliability
- “Fail-To-On” Emergency Lighting
- Half-Second Delayed On Positively Identifies Emergency Fixtures for Required Maintenance
- UL 924 Listed, Meets NEC, OSHA and NFPA Safety Codes; UL 2043 Plenum Rated

Specifications

- 120/277 VAC; 60Hz
- Maximum Load:
 - LED Lighting 18A @ 120/277 VAC
 - Ballast 20A @ 120/277 VAC
 - Incandescent 10A @ 120 VAC
 - Motor 1HP @ 120 VAC
- Remote Activation: Supplies 24 VDC source for dry contact closure
- Integral Control: Push-to-test button on unit
- Housing: Fire rated V-0, 176 F (80 C)
- Operating Temperature: 32 to 131 F (0 to 50 C)
- Relative Humidity: 5 to 95% noncondensing
- Dimensions: 1.7" x 2.97" x 1.64" (43.2mm x 75.4mm x 41.7mm) H x W x D with a 1/2" (75.4mm) threaded nipple
- Agency Approval: UL, C-UL listed Emergency Lighting and Power Equipment
- Warranty: 5 year part replacement

Application Example

Trystar provided a municipal facility with a 12 kW emergency lighting inverter and (4) ZoneSaver-2 products. This facility housed four hockey rinks, each with a separate lighting panel; and each of the four rinks required 3 kW of egress lighting. On many occasions, only one rink was being used at a time. The municipality's engineers estimated that for every 90 minute outage at one rink, the ZoneSaver-2 would save over \$1200 in unnecessary energy and maintenance costs. Based on experiencing an annual average of (3) power outages, the municipality anticipated saving approximately \$3600 each year.

Summary

The UL 924 Listed ZoneSaver-2 provides considerable energy savings when used in the emergency lighting design of multi-floor / multi-use facilities. By maintaining independent zone control of normally off emergency lighting, a facility can minimize its unnecessary utility expenses and maintenance costs.

