KETRA™

Ketra, Inc. Emergency Lighting App Note
February 7, 2016

Ketra makes a cohesive system of lighting fixtures, controls and software that allows for easy deployment of natural light. Our lighting products can operate individually or as part of a larger lighting control solution. The Ketra system can be standalone or integrated with other lighting controls and building automation products. This note will address Ketra's response protocol for emergency situations, such as a loss of utility power.

Each lighting product can be programmed to have a default power on state, at which both intensity and color point may be specified. For example, a lamp can be programmed to have a default state of 2700K at 50% intensity. This means that every time the lamp is powered off and then on again it will return to 2700K, 50% intensity. If the lighting product is part of Ketra's lighting control network, it can then be set to any other desired setting in response to user input, time clock events, etc. In the case of an Emergency Mode situation, it is necessary to prevent unauthorized users or time-clock events from changing the lighting state.

There are several key factors that should be considered when using Ketra's lighting and control products as part of an EM lighting solution. The Ketra lighting products that are intended to be used as emergency light sources should be specified in order to maintain appropriate light levels (per Code). The spacing, quantity and default state (intensity and color) of the Ketra products should be taken into account.

Ketra's retrofit lamps -- such as the S38 -- operate directly from AC mains supply. Upon loss of utility power, a two-second transfer delay (before switching over to battery backup) should be programmed into the EM Inverter system. This will enable the Ketra lamps to fully reset and power on in the default state commissioned by a Specifier to meet Code required egress light levels. Ketra's lighting products are designed to be powered by a sinusoidal AC power source. Some inverters produce a square wave AC power source, so it is important to ensure that a sinusoidal AC power source is specified.

If Ketra controls products are also being used, they should be specified in such a way as to disable their operation during an EM situation. This can be accomplished in a few ways:

The first is to put the control products on a non-EM Inverter circuit such that they will lose power in the event of utility power loss. This would disable the control product in the event of utility power loss and would prevent keypads or time-clock events from changing the state of the lighting. An example of this appears in Figure 1.
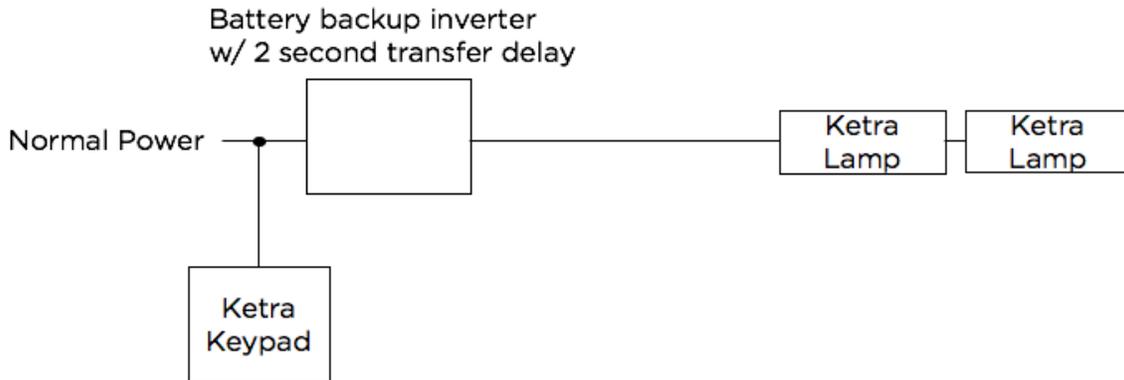
Figure 1.

The second method is to sense the EM situation and disable the control device from changing any lighting states. For example, the N3 Satellite Analog I/O inputs can be configured to sense the state of an "on-battery contactor" on an EM Inverter system (as in Figure 2). The N3 will sense that the EM Inverter is operating and thus can be configured to be in "EM Mode," commanding the Ketra lighting products to go to a default EM control state. This would be most appropriate with G2 Linear products that are physically wired to an N3 Satellite.

As with the previous system it is important that Ketra Lamps have a two second power cycle delay. This ensures that the products will reset to their default on state. While it is true that the N3 will wirelessly send a command to the lamps to go to EM Mode, we cannot guarantee that other lamps that were part of the KetraNet Mesh network have not lost power and thus "broken" the wireless connection.
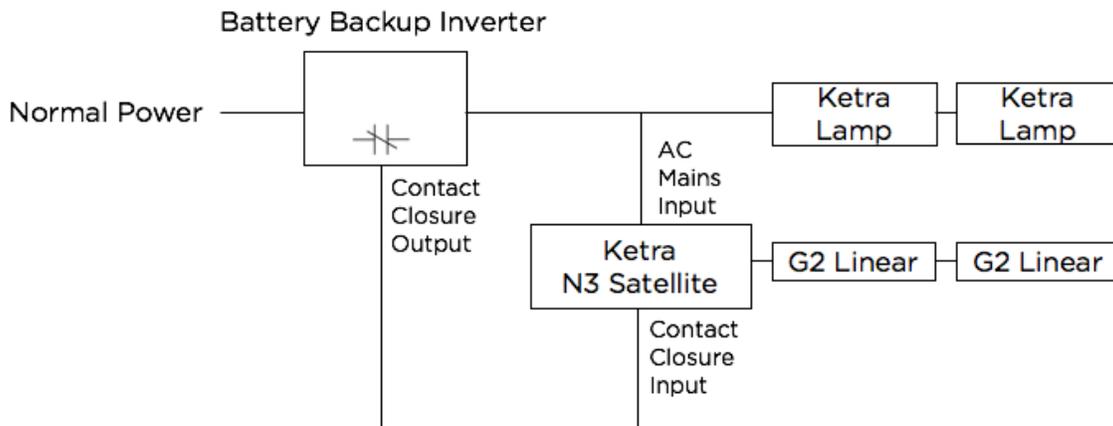

Figure 2.

If the emergency backup system employs a generator, a UL1008 transfer switch and UL924 relay can be used to sense the loss of utility power and force the lighting controls into Emergency Mode. See Figure 3 for an example of this.
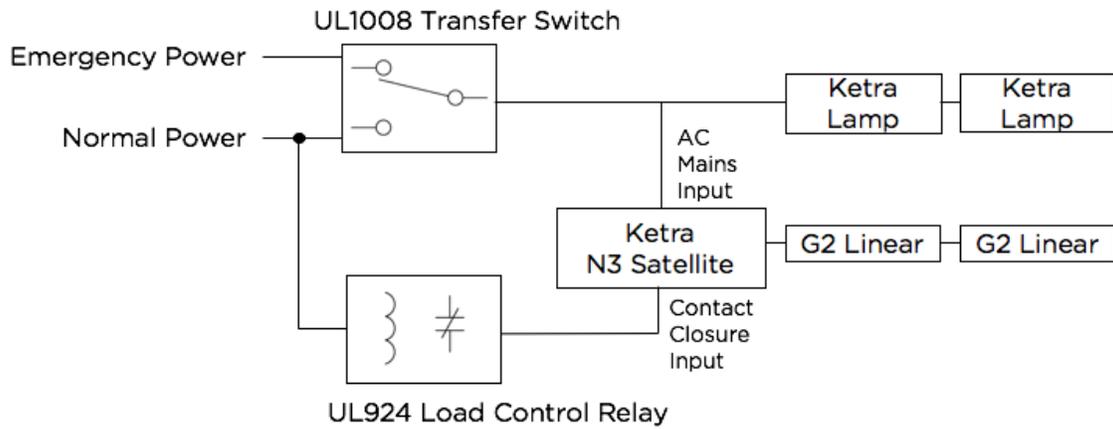

Figure 3.