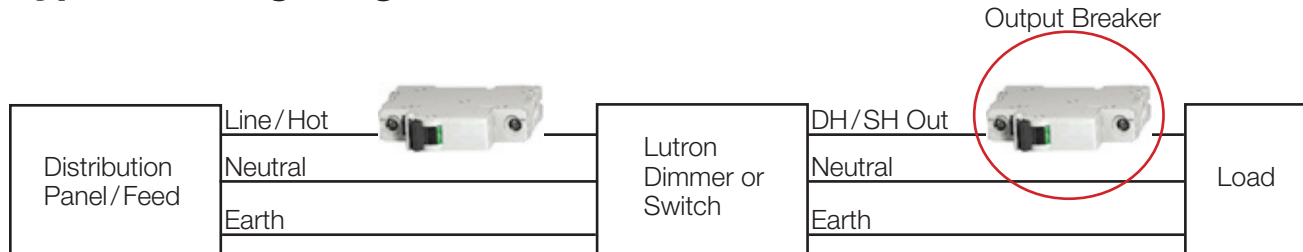


Using Output Breakers (Load Side Switching) with Dimmers and Switches

There are some applications where a breaker must be installed on the output of a Lutron control. This may be required due to the electrical codes in a specific region, or as a customer request to add additional protection for a control device.

Typical Wiring Diagram



Note: There is certain control equipment that could be damaged when an output breaker is used. Switching ON a breaker with a load attached will have high inrush current which varies depending on the load. Incandescent, electronic/magnetic low-voltage, and LED drivers/fixtures will all have higher “inrush” current when turned ON with a breaker.

Using an Output Breaker with Switching Controls

Output breakers can be used with switching controls. The large inrush is not a problem for a switch, because a switch is designed to handle high inrush currents as seen when turning on an output breaker.

Using an Output Breaker with Dimming Controls

Reverse-Phase Dimmers:

It is Lutron’s recommendation not to use an output breaker on the output of any reverse-phase capable dimmer. These dimmers are not rated for the use of output breakers, and it may cause damage to the dimmer. Reverse-phase dimmers slowly turn ON the load to reduce the high inrush currents seen by the dimmer. If the dimmer is already ON, and the output breaker is turned from OFF to ON, then the dimmer will experience the full inrush current and it could damage the dimmer. If the customer is requiring the use of an output breaker on a reverse-phase dimmer, the load side breaker should never be switched ON or OFF while the control module is still powered on. In order to service the load, the breaker upstream of the control module must be switched OFF powering down the load and control module together. Also, magnetic low-voltage loads must not be used if using an output breaker with a reverse-phase capable dimmer.

Forward-Phase Dimmers:

Output breakers can be used with forward-phase only dimmers without concern of damaging the dimmer. The load must be within the specified ratings for the product.

Phase Adaptive or Phase Selective Dimmers:

Phase adaptive or phase selective dimmers are considered reverse-phase capable dimmers, and not forward-phase only. See section on reverse-phase dimmers.

Using an Output Breaker for Additional Protection

Some customers may want to use an output breaker to provide additional protection for Lutron controls. Using an output breaker to give additional protection for a switch is acceptable. For example, if you are using a 1 A switch (such as the MQSE-4S1-D), it is acceptable to put a smaller breaker on the output, compared to the feed breaker, for protection against an overload. Because of the slow reaction time of breakers, using an output breaker with a dimmer will add minimal additional protection against faults and miswires, and is not recommended.

Warranty Information

If a reverse-phase capable dimmer were to become damaged due to the use of output breakers, it would not be covered under Lutron’s standard warranty. Lutron would still provide the standard warranty terms and coverage if products were to become damaged by other causes. Reference the product’s standard warranty information for details.

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