

Using an External In-line Fuse with Lutron Controls

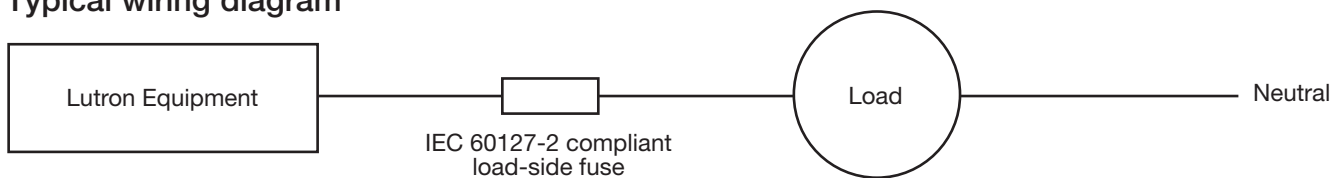
Tungsten Lamp Control

As lamp manufacturers move towards high-efficiency lighting technology (i.e., LED lamps) and move away from tungsten lamp technology, many of the remaining manufacturers have started making un-fused tungsten lamps in order to reduce manufacturing costs.

Historically, tungsten lamps were fused and posed no issue/risk with lighting control equipment. During initial installation, lamps from reputable manufacturers are typically used. But there is a potential risk during re-lamping, that un-fused tungsten lamps may be used (which poses a higher risk to the lighting control equipment). If an un-fused lamp fails in a manner that causes a short of its filament, it may trip circuit breakers, damage the lighting controls, and cause other potential field issues.

To protect Lutron equipment in the event of a lamp failure, Lutron recommends using an external, IEC 60127-2 compliant or equivalent in-line fuse (installed on the load-side), for each output that is controlling a tungsten load.

Typical wiring diagram

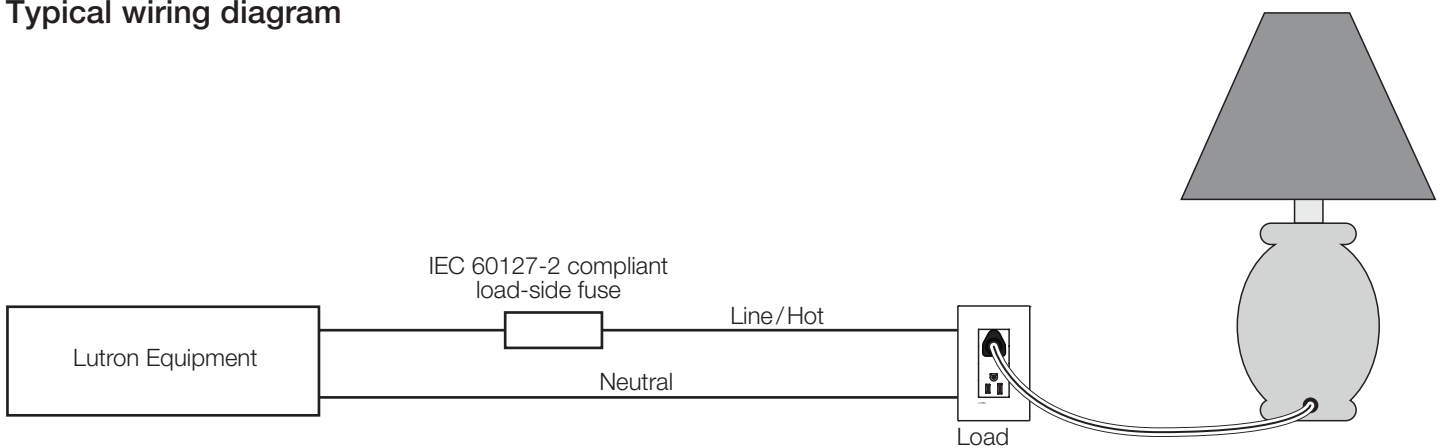


Plug-in Lamp Control

When controlling plug-in lamps via a Lutron load controller, there is a high risk that plug-in receptacle loads can be disconnected, and high-current motor loads (e.g. vacuum cleaners, shavers, etc.) could be connected. This is more prevalent in international hotel properties if local codes do not mandate a non-standard connection type be used with controlled receptacles/sockets. Disconnecting the low-current lighting load and connecting one of the aforementioned loads can lead to equipment damage, or other potential field issues.

To prevent these issues and protect the Lutron equipment in these applications, Lutron recommends also using an external, IEC 60127-2 compliant or equivalent in-line fuse.

Typical wiring diagram



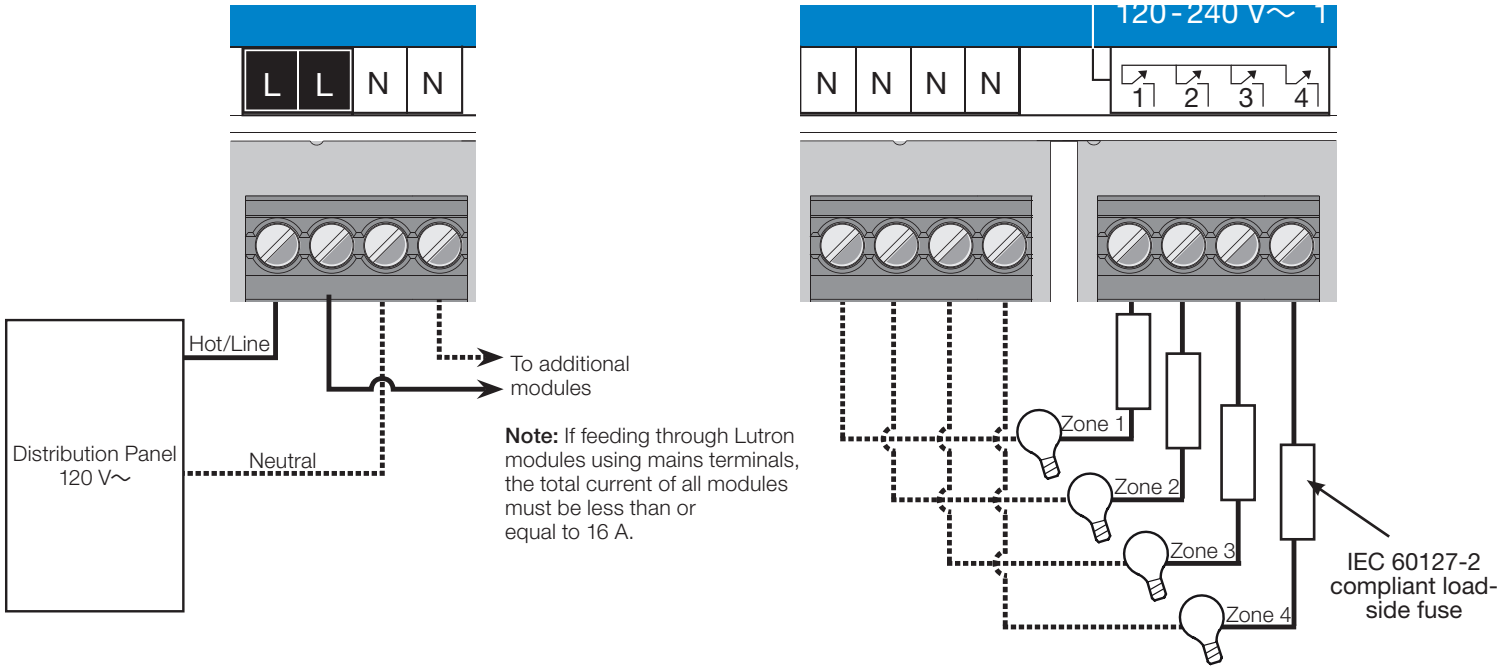
All fuses must be used in conjunction with a fuse holder. Fuse holders can be purchased from many different manufacturers see the following page for examples of fuse holders.

ESN 1 A Switching Module (LQSE/MQSE-4S1-D)

The ESN 1 A Switching module is used for the control of lighting loads only. It is rated for loads as defined by IEC/EN 60669, NEMA 410, INC, MLV and ELV. It is not designed to control receptacle loads or loads greater than 1 A on one of its zone outputs.

Since this module is intended for low power applications, it has been designed with an internal fuse that will open when the controller experiences a high current condition. This can be due to overloading, surge, misapplications or mis-wires. When the internal fuse opens the device will no longer operate and must be replaced. To prevent this failure and to protect the module, an external IEC 60127-2 compliant in-line fuse (installed on the load-side) must be connected to each output that is controlling a load. An external fuse allows for simple and easy field replacement.

Typical wiring diagram



Fuse Specifications

Fuse should be IEC 60127-2 compliant

Fuse Size	Ampere Rating	Voltage rating (V~)	Melting I ² T at 10 In (A ² Sec)	Amp Range/Voltage at I.R
2AG or 5x20 mm	3.15 A	250	38	10 A/250 V - 1500

Refer to the fuse holder specifications below.

DIN rail fuse holder **Fuse size (250 V~ max)**

ABB/Entelec: P/N 010513511 2AG/5x20 mm

In-line fuse holder **Fuse size (250 V~ max)**

Littlefuse: P/N 01500274Z 2AG/5x20 mm

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Lutron Contact Numbers

WORLD HEADQUARTERS

USA
Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299
TEL: +1.610.282.3800
FAX: +1.610.282.1243
support@lutron.com

**North & South America
Customer Assistance**
USA, Canada, Caribbean:
1.844.LUTRON1 (1.844.588.7661)
Mexico:
+1.888.235.2910
Central/South America:
+1.610.282.6701

EUROPEAN HEADQUARTERS

United Kingdom
Lutron EA Ltd.
6 Sovereign Close
London, E1W 3JF United Kingdom
TEL: +44.(0)20.7702.0657
FAX: +44.(0)20.7480.6899
FREEPHONE (UK): 0800.282.107
Technical Support: +44.(0)20.7680.4481
lutronlondon@lutron.com

ASIAN HEADQUARTERS

Singapore
Lutron GL Ltd.
390 Havelock Road
#07-04 King's Centre
Singapore 169662
TEL: +65.6220.4666
FAX: +65.6220.4333
Technical Support: 800.120.4491
lutronsea@lutron.com

Asia Technical Hotlines

Northern China: 10.800.712.1536
Southern China: 10.800.120.1536
Hong Kong: 800.901.849
Indonesia: 001.803.011.3994
Japan: +81.3.5575.8411
Macau: 0800.401
Taiwan: 00.801.137.737
Thailand: 001.800.120.665853
Other Countries: +65.6220.4666