

Application Note for Current Sink Only Controls

Some Lutron controls work exclusively with the current sink standard. If current sourcing with these particular products is necessary, then the Lutron provided custom power supply can be used.

0-10 V_{DC} Dimming

0-10 V_{DC} is an analog lighting control protocol. A 0-10 V_{DC} control applies a voltage between 0 and 10 V_{DC} to produce a varying intensity level. There are two existing 0-10 V_{DC} standards. They are not compatible with each other, so it is essential to understand which type is required.

The two control types are current source (a theatrical dimming standard) and current sink (a dimming ballast standard).

There is an IEC standard for current sink controls - Standard 60929 Annex E. The standard requires that the ballast (or driver) provides full light output when the control voltage is 10 V_{DC} (or above). As the control voltage is reduced by the control, the light level is reduced. At a control voltage of 1 V_{DC}, the ballast (driver) provides its minimum light level. An additional specification that needs to be considered is the current carrying capacity of the control. Standard 60929 Annex E requires the ballast (driver) to limit the current draw to 2.0 mA maximum.

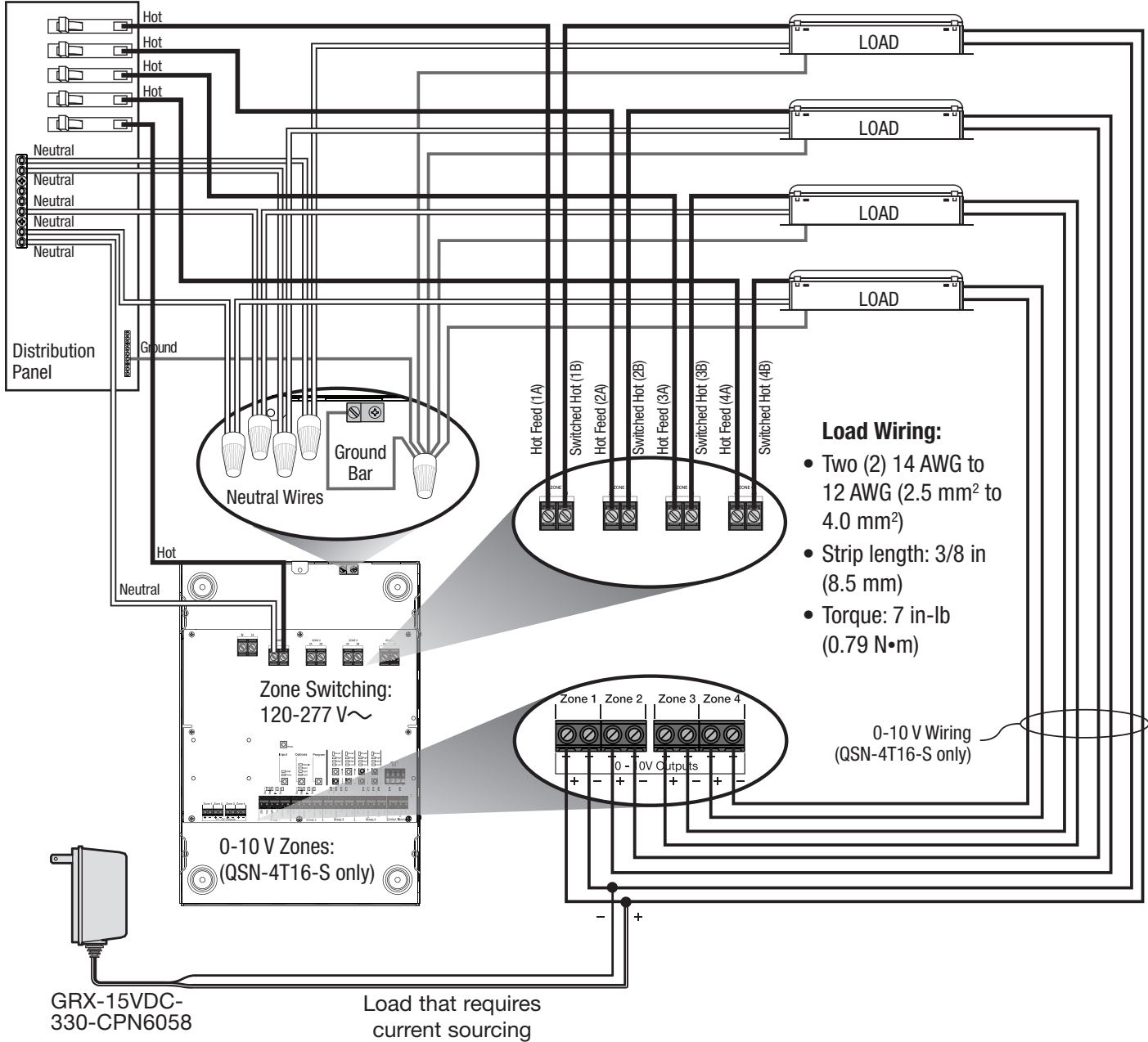
Current sourcing controls for 0-10 V_{DC} are supported by the standard ESTA E1.3, Entertainment Technology – Lighting Control System – 0-10 V_{DC} Analog Control Protocol, Draft 9 June 1997. It defines 10 V_{DC} as 100% light level and 0 V_{DC} as off. Drivers using this protocol require the control to provide (source) the voltage.

Lutron Solutions

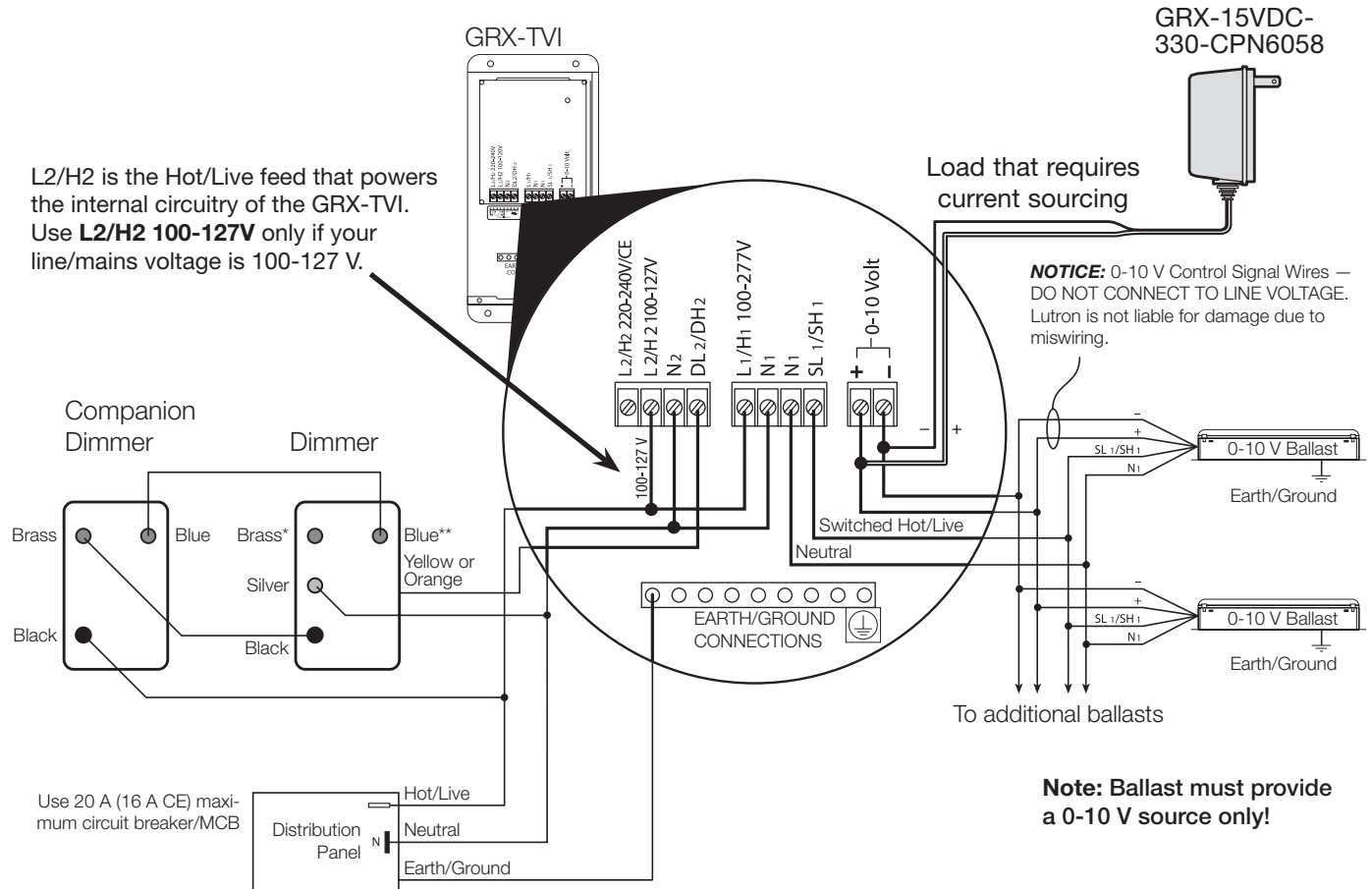
This Lutron part has a 10 mA capacity, with capability to operate a minimum of 5 ballasts (drivers) if they are compliant with ESTA E1.3. The Lutron model number is GRX-15VDC-330-CPN6058. Ballasts must be wired as shown in the diagrams on the following pages. For proper operation, each diagram corresponds to a different Lutron product that only supports current sinking. They are the Energi Savr Node™ GRX-TVI and Nova®, Nova T₅® and Diva® 0-10 V Controls with PP-120H Power Pack.

Note: For emergency setups, connect the provided Lutron® power supply to emergency power.

Ballast Wiring Diagram for ESN Domestic



Ballast Wiring Diagram for GRX-TVI Interface

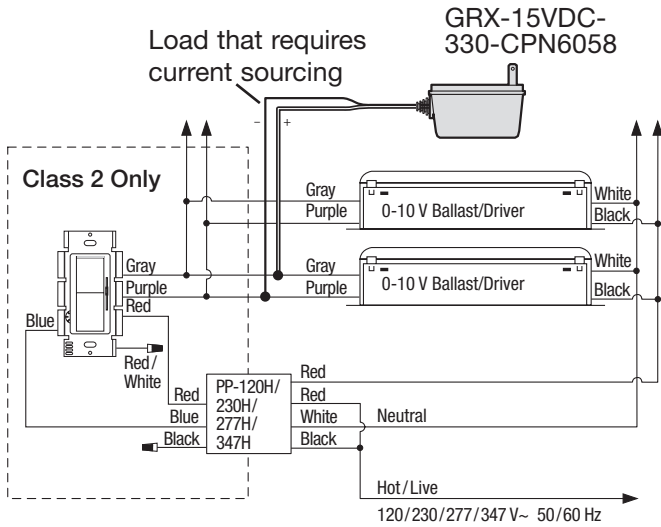


* The brass screw terminal is not used. Tighten the brass screw terminal. Do not connect the brass screw terminal to ground or to any other wiring.

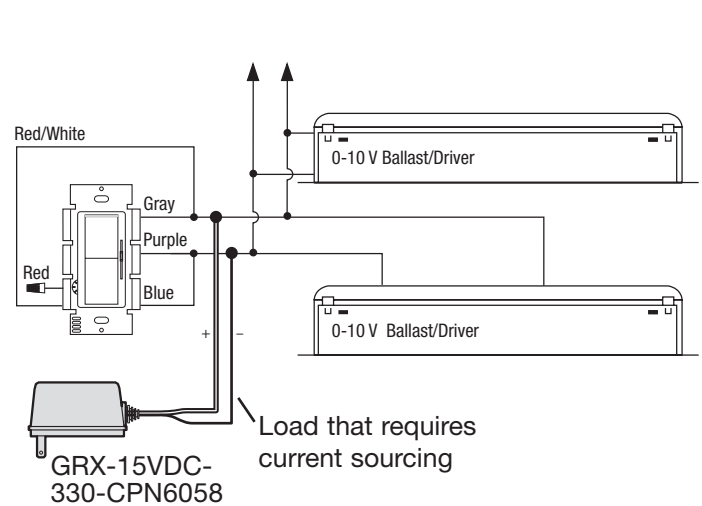
** When used as a single-pole dimmer, the blue screw terminal is not used. When used as a single-pole dimmer, tighten the blue screw terminal—do not connect the blue screw terminal to ground or to any other wiring.

Ballast Wiring Diagram for Nova® and Diva® with PP-120H Power Pack

Dimming With ON/OFF Control
Wiring Diagram Using Power Pack



Dimming With ON/OFF Control For Drivers Which Support
Dim To OFF Capability
Power Wiring Not Shown—See Lighting Device For Wiring



Lutron, Diva, Nova, and Nova T[®] are registered trademarks and Energi Savr Node is a trademark of Lutron Electronics Co., Inc.

© 2011 Lutron Electronics Co., Inc.

For further information on Lutron® products please visit www.lutron.com

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
Toll-Free: 1.888.LUTRON1
Technical Support: 1.800.523.9466
intsales@lutron.com

North & South America Technical Hotlines

USA, Canada, Caribbean:
1.800.523.9466
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.
15 Hoe Chiang Road
#07-03, Tower 15
Singapore 089316
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

LUTRON®

Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299 U.S.A.
12/2011 P/N 048-442 Rev. A