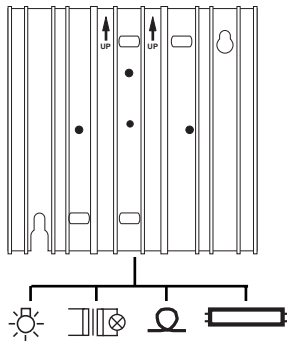


# GRAFIK Eye® Power Interfaces

## Power Booster (PB) Electronic Low Voltage Interface (ELVI) Fluorescent Dimming Ballast Interface (FDBI)

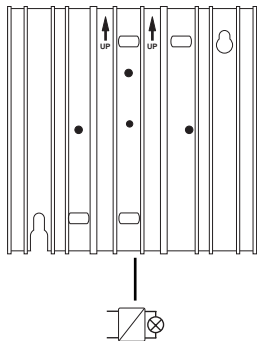
Installation Instructions — Please Read

### PB



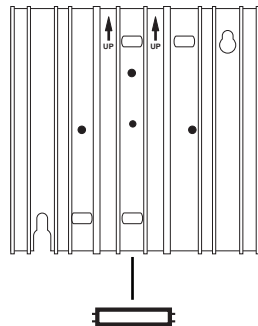
Incandescent  
Magnetic Low Voltage  
Neon/Cold Cathode  
Lutron Tu-Wire® Dimming Ballast

### ELVI



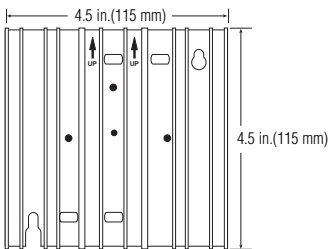
Electronic Low Voltage

### FDBI



Lutron Hi-lume® or Eco-10™  
Fluorescent Dimming Ballast

This product may be covered by one or more of the following U.S. patents: 4,797,599; 4,825,075; 4,893,062; 4,924,157; 5,030,893; 5,191,265; 5,430,356; 5,463,286; 5,530,322; 5,808,417; DES 308,647; DES 310,349; DES 311,170; DES 311,371; DES 311,485; DES 311,678; DES 313,738; DES 335,867; DES 344,264; DES 370,663; DES 378,814 and corresponding foreign patents. U.S. and foreign patents pending.



### Interface shown with faceplate removed

This “load-side” equipment installs on the zone wiring between the Control Unit\* and the lighting load.

The **PB** increases a Control Unit’s zone load capacity for Incandescent/Halogen (Tungsten), Magnetic Low Voltage, Neon/Cold Cathode, and *Lutron Tu-Wire* load types.

The **ELVI** enables a zone of the Control Unit to control Electronic Low-Voltage loads.

The **FDBI** enables a zone of the Control Unit to control fluorescent loads with *Lutron’s Hi-lume or Eco-10* phase-controlled dimming ballasts.

The maximum load capacity for each Interface is shown in the table that follows.

Unit	120V	220-240V (AU)	230V (CE)
PB	1920W/VA 16A	2400W/VA 10A	1840W/VA† 8A†
ELVI	1000W/VA 8.3A	1200W/VA 5A	1200W/VA 5.2A
FDBI	1920W/VA 16A	2400W/VA 10A	— —

† 1200W/VA and 5.2A for flush mount.



**Danger!** Always turn OFF the circuit breakers/MCB or remove the main fuses from the power line before doing any work. Failure to do so can result in serious personal injury. More than one MCB can power this device.

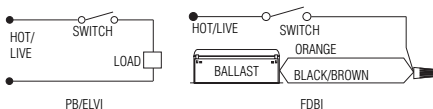
**Disconnect all power sources before servicing unit.**

1. This Interface must be installed by a qualified electrician in accordance with all applicable regulations.
2. Improper wiring can result in personal injury, damage to the Interface, or damage to other equipment.
3. Up to two **PB/ELVI/FDBIs** per zone.
4. The **PB/ELVI/FDBI** must be mounted with arrows facing upward to ensure adequate cooling.
5. **PB:** If using low-voltage incandescent fixtures, use only with iron core (magnetic) transformers.
6. **ELVI:** Use only with solid-state (electronic) low-voltage transformers that are manufacturer approved to be dimmed by reverse phase control.
7. **CAUTION!** Dimmed magnetic low-voltage transformers: To avoid excessively high current flow that can cause transformer overheating and failure, observe the following:
  - (a) Do not operate the Interface with all of the lamps removed or with any lamps inoperative.
  - (b) Replace any burned out lamps immediately.
  - (c) Use only transformers that incorporate thermal protection or fused primary windings.
8. **ELVI/FDBI:** These Interfaces contain a thermal device that turns Off the Interface if overloaded. The Interface will turn On when it cools.

\* See Page 5 for other *Lutron* products that can be used to control your PB/ELVI/FDBI.

## Test load for short circuits

- Turn power Off.
- **PB/ELVI:** Connect standard switch between Hot/Live lead and the load wire to test circuit.
- **FDBI:** Connect standard switch between Hot/Live lead and the Dimmed Hot/Live and switched Hot/Live leads of the ballast.
- Turn power On and check for short or open circuits.



## Wiring Instructions

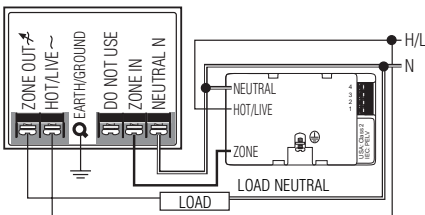
1. Turn power Off to the Control Unit *and* the feed to the **PB, ELVI, or FDBI!**
2. Mount standard U.S. 2-gang wallbox\* (available from *Lutron*, P/N 241-641), 3 1/2 in. (87 mm) deep is strongly recommended, 2 3/4 in. (68 mm) minimum. Allow at least 4 1/2 in. (110 mm) clearance above/below Interfaces to ensure proper heat dissipation.
3. Strip 1/2 in. (12 mm) insulation from all wires in wallbox and wire as shown. All connections are made using #12 AWG (2.5 mm<sup>2</sup>) wire. Power terminals can accept up to two #12 AWG (2.5 mm<sup>2</sup>) wires. The NEUTRAL N terminal is for the Control neutral, **not** the load neutral! The recommended installation torque is 9.0 in. • lbs. (1.0 N•m) for line voltage connections.



## Single-Feed Wiring for PB/ELVI 120V and 220-240V

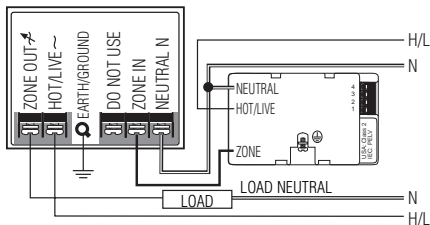


The **PB/ELVI** may be on the same circuit as the Control Unit *only if* the total load does not exceed the rating of the breaker.



## Dual-Feed Wiring for PB/ELVI 120V and 220-240V

The load breaker/MCB can be on a different phase than the control breaker/MCB. *If GFCI/ELB breakers are used, please contact Lutron for important wiring and product information.*

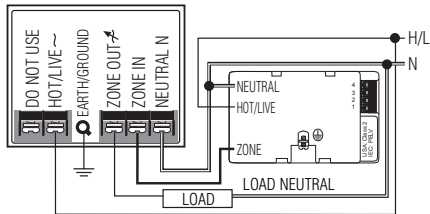


- \* Wallbox may be flush mounted or surface mounted. If mounting Interface in a panel, please refer to Panel Mounting section for important information.

## Single-Feed Wiring for PB/ELVI 230V

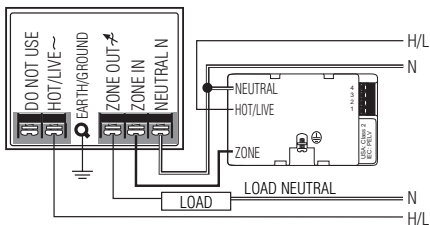


The **PB/ELVI** may be on the same circuit as the Control Unit *only* if the total load does not exceed the rating of the breaker.



## Dual-Feed Wiring for PB/ELVI 230V

The load breaker/MCB can be on a different phase than the control breaker/MCB. If GFCI/ELB breakers are used, please contact Lutron for important wiring and product information.



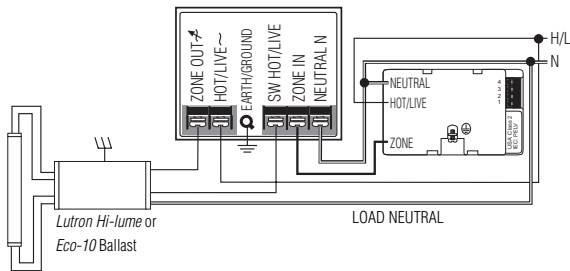
## Tu-Wire Dimming Ballast

- When using a **PB** to control a *Lutron Tu-Wire* dimming ballast, the associated zone on the *GRAFIK Eye*® 3000 Series Control Unit must be set to the *Tu-Wire* load type. Please see the *GRAFIK Eye* 3000 Series Installer's Guide for more details.
- The **PB 230V** must not be used with *Tu-Wire* ballasts because the *Tu-Wire* load type is not available on 230V CE models of the *GRAFIK Eye* Control Unit.

## Single-Feed Wiring for FDBI 120V and 220-240V

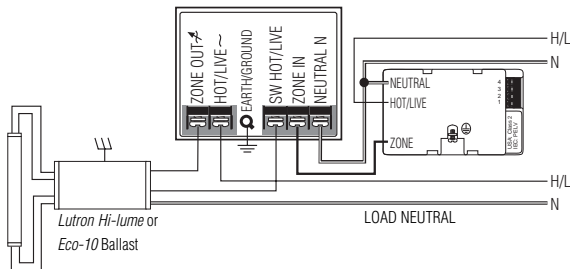


The **FDBI** may be on the same circuit as the Control Unit if, and only if, the total load does not exceed the rating of the breaker. Connect ZONE OUT only to *Lutron Hi-lume* or *Eco-10* Electronic Dimming Ballasts.



## Dual-Feed Wiring for FDBI 120V and 220-240V

The load breaker/MCB can be on a different phase than the control breaker/MCB. *If GFCI/ELB breakers are used, please contact Lutron for important wiring and product information.* Connect ZONE OUT only to *Lutron Hi-lume* or *Eco-10* Electronic Dimming Ballasts.



## Lutron Products

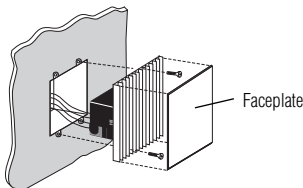
The following *Lutron* products can also be used to control your **PB/ELVI/FDBI**:

- *GRAFIK Eye* GP Dimming Panels.
- *GRAFIK Eye* LP Dimming Panels.
- *Homeworks® Interactive™* Remote Power Panels.
- *Lutron* fluorescent wallbox dimmers.
- Please contact *Lutron* for use with other *Homeworks® Interactive™* or *Radio RA®* dimmers.

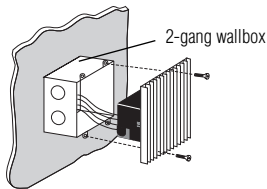
## Mounting: Interface must be mounted *vertically*!

1. Confirm all connections and mount the Interface using the screws provided.
2. Restore power to the system.

### Flush Mount



### Surface Mount

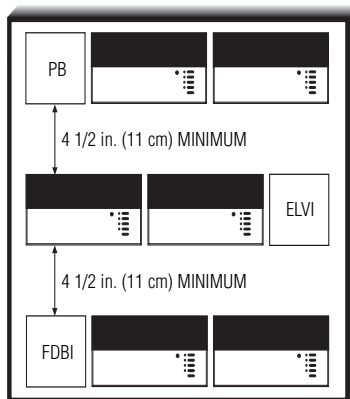


## Panel Mounting

- The enclosure must be in accordance with all local and national electrical codes.
- Lutron does not recommend using a door to enclose the front of a panel, since this restricts airflow to the *GRAFIK Eye* Control Units and Interfaces.
- If mounting multiple Control Units or Interfaces in an enclosure:
  1. Ambient temperature within an enclosure **must remain between 32°—104° F (0°—40° C)**.
  2. If not mounting in a metal enclosure, all units **must** be mounted in a wallbox.
- To improve heat dissipation of Interfaces, (i.e., **PB**, **ELVI**, **FDBI**), remove the faceplate from the unit.



*GRAFIK Eye* Control Units and Interface Units dissipate heat when operating. Obstructing these units can cause malfunction to both the Control Unit and the Interface if ambient temperature does not remain between 32°—104° F (0°—40° C).



# Troubleshooting Guide

<b>Symptom</b>	<b>Causes</b>	<b>Solution</b>
Lights do not come on.	Power is off	Restore power to the <b>PB/ELVI/FDBI</b> . Restore power to the Control Unit.
	Miswire	Confirm wiring per wiring diagrams.
	Bulb(s)/lamp(s) burned out <i>GRAFIK Eye 3000 Control Unit</i>	Replace bulb(s)/lamp(s).  Refer to troubleshooting section of <i>GRAFIK Eye Control Unit Installer's Guide</i> .
Lights turn on/off unexpectedly.	Interface is overloaded	Check for excess load, proper mounting, and adequate air convection. Allow unit to cool.
	Load Type	Confirm that the load type being switched/dimmed is compatible with the <b>PB/ELVI/FDBI</b> .
	<i>GRAFIK Eye 3000 Control Unit</i>	Refer to the troubleshooting section of <i>GRAFIK Eye Control Unit Installation Guide</i> .

Internet: [www.lutron.com](http://www.lutron.com)  
E-mail: [product@lutron.com](mailto:product@lutron.com)

#### **WORLD HEADQUARTERS**

Lutron Electronics Co. Inc.,  
**TOLL FREE:** (800) 523-9466  
(U.S.A., Canada, Caribbean)  
Tel: (610) 282-3800;  
International 1- 610-282-3800  
Fax: (610) 282-3090;  
International 1-610-282-3090

#### **ASIAN HEADQUARTERS**

Lutron Asuka Co, Ltd.,  
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Tel: (03) 5405-7333;  
International 81-3-5405-7333  
Fax: (03) 5405-7496;  
International 81-3-5405-7496

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**FREEPHONE:** 0800 282107 (U.K.)  
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International 44-171-702-0657  
Fax: (171) 480-6899;  
International 44-171-480-6899

#### **HONG KONG SALES OFFICE**

Lutron GL (Hong Kong)  
Tel: 2104-7733;  
International 852-2104-7733  
Fax: 2104-7633;  
International 852-2104-7633

#### **SINGAPORE**

Lutron GL (Singapore)  
Tel: 65 220 4666  
Fax: 65 220 4333

#### **LIMITED WARRANTY**

Lutron will, at its option, repair or replace any unit that is defective in materials or manufacture within one year after purchase. For warranty service, return unit to place of purchase or mail to Lutron at 7200 Suter Rd., Coopersburg, PA 18036-1299, postage pre-paid.

*This warranty is in lieu of all other express warranties, and the implied warranty of merchantability is limited to one year from purchase. This warranty does not cover the cost of installation, removal, or reinstallation, or damage resulting from misuse, abuse, or improper or incorrect repair, or damage from improper wiring or installation. This warranty does not cover incidental or consequential damages. Lutron's liability on any claim for damages arising out of or in connection with the manufacture, sale, installation, delivery, or use of the unit shall never exceed the purchase price of the unit.*

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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