



## HomeWorks B & O® Keypads

### Installation Instructions

Please Read Before Installing

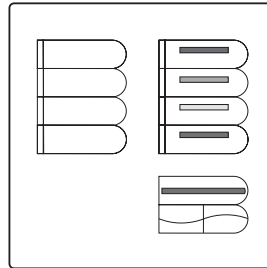
HWBO-8SE-IR, HWBO-4SE-IR, HWBO-4SE-M  
15V === 65 mA Class 2/PELV

#### Overview

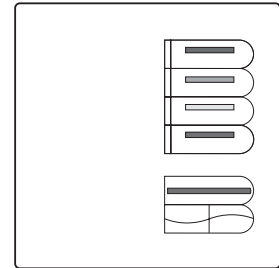
The HWBO-8SE-IR, HWBO-4SE-IR, and HWBO-4SE-M are for use with *HomeWorks* systems. The keypad buttons are programmed using the *HomeWorks* Utility. The HWBO-4SE-IR and HWBO-8SE-IR have an integrated IR receiver (on button 5 - no indicator LED) that is compatible with the Bang & Olufsen® (*B & O*) Beo4® IR Remote Control. The IR receiver accesses buttons 1-5, 23 and 24. On the HWBO-8SE-IR, buttons 6-9 can be configured in the *HomeWorks* Utility to be controlled by the IR receiver. The IR receiver can also receive commands from *Beo4* buttons not available on the *HomeWorks B & O* Keypads, such as <<, >>, STOP, and GO. Refer to Button Function Chart (page 4).

Up to 32 keypads, each with a unique address, can be connected to each keypad link on the *HomeWorks* 4 Series™ or 8 Series™ Processor. Each HWBO-4SE-IR/M keypad counts as 4 LEDs, and each HWBO-8SE-IR keypad counts as 8 LEDs. A maximum of 300 keypad LEDs can be connected per 8 Series Processor, and a maximum of 150 keypad LEDs can be connected per 4 Series Processor. To add LED capacity, refer to the section about the HWI-PS in the *HomeWorks* Technical Reference Guide (P/N 360-923).

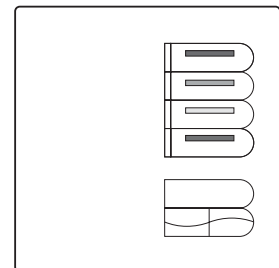
HWBO-8SE-IR



HWBO-4SE-IR



HWBO-4SE-M



#### Important Notes

**Codes:** Install in accordance with all local and national electrical codes.



**Danger:** These controls must not be used to control equipment which is not visible from every control location. They must also not be used to control equipment which could create hazardous situations such as entrapment if operated accidentally. Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, garage doors, industrial doors, microwave ovens, heating pads, etc. It is the installer's responsibility to ensure that the equipment being controlled is visible from every control location and that only suitable equipment is connected to these controls.

**Environment:** Ambient operating temperature: 0-40°C (32-104°F), 0-90% humidity, non-condensing. *Indoor use only.*

**Cleaning:** To clean, wipe with a clean damp cloth. **DO NOT** use any chemical cleaning solutions.

**Wallboxes:** *HomeWorks B & O* keypads may be mounted in standard German or U.K. wallboxes (or in Lutron Wallbox P/N 241-683, purchased separately). **Note:** Keypad cannot be mounted in a U.S.-style wallbox. See

Mounting Diagram (page 2).

**Keypad Wiring:** Keypad wiring may be in a daisy-chain, star, or T-tap configuration. Each home run on a link may be up to 305 m (1,000 ft.) and may contain up to 10 keypad devices. The total length of wire on that link (all home runs) may be up to 1220 m (4,000 ft.). Up to 32 keypad devices may be placed on each processor link configured as a keypad link in the *HomeWorks* Utility. An external power supply may be required depending on the total current draw of all keypad devices on the processor.

**Location:** For best performance, do not locate keypad directly facing a plasma television.

## Installation

1. Disconnect power to the keypads by turning off all circuit breakers connected to the HomeWorks® processor or keypad link auxiliary power supply (HWI-PS).



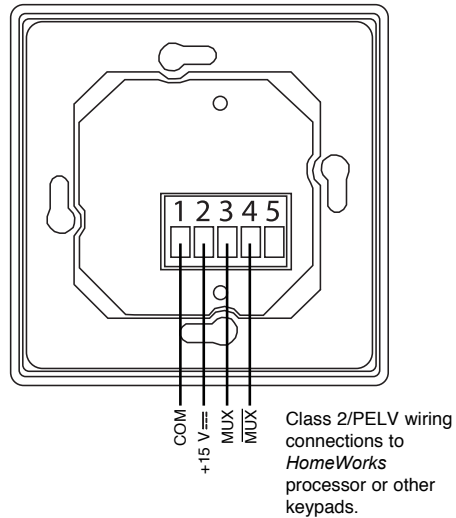
**Wiring with power ON may result in personal injury.**

2. Address keypads. Assign a unique address to each keypad using the DIP switch on the front of the keypad. See Keypad Addressing (page 3) for DIP switch location and DIP switch settings. Be sure to record the address for future programming purposes.

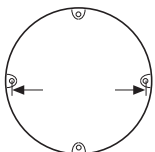
**Do not change DIP switches 8 and 10. These switches are set at the factory as shown in Factory Set DIP Switches (page 3).**

3. Strip insulation from wires to 10 mm (3/8 in.). Each terminal will accept one or two 1.0 mm<sup>2</sup> (18 AWG) wires.
4. Connect wiring to terminal block as shown in Wiring Diagram (page 3). **Note:** The “shield” connection (position number 5) in the terminal block is not used.
5. Mount keypad as shown in Mounting Diagram (below). **Do not over-tighten mounting screws.** Some wallbox styles use only two of the four mounting screws.
6. Restore power to the HomeWorks processor or keypad link auxiliary power supply (if used).

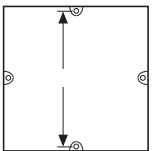
## Keypad Rear View



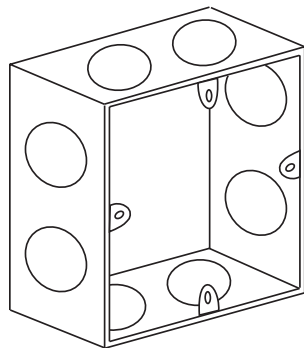
## Mounting Diagram



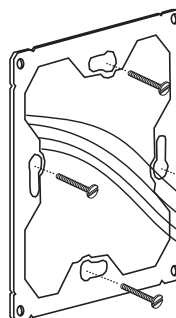
German Backbox  
(40 mm deep)



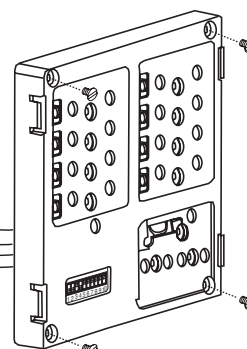
U.K. Backbox  
(35 mm deep)



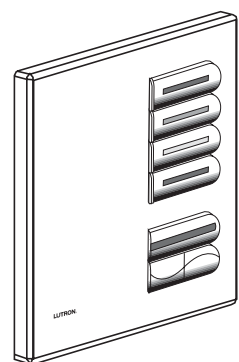
Lutron Wallbox  
P/N 241-683



Adapter Plate



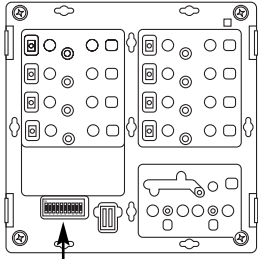
Keypad



Faceplate

# Keypad Addressing

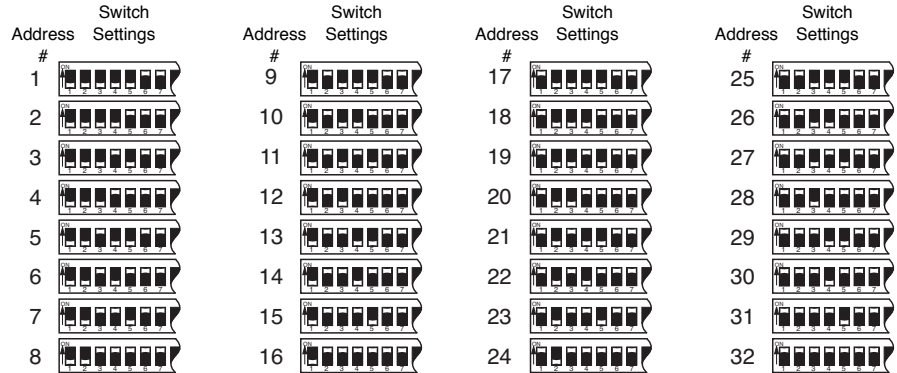
## Keypad Front View (faceplate removed)



DIP switches 1-5 for setting address, DIP switches 6-10 do not affect keypad address.

## DIP Switches

Set DIP switches 1-5 to give the keypad a unique HomeWorks® system address from 1 to 32. DIP switches 6 and 7 do not affect the keypad address and should be always set in the up (on) position.

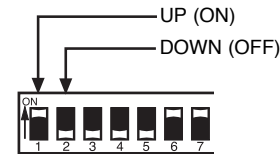


## Factory Set DIP Switches

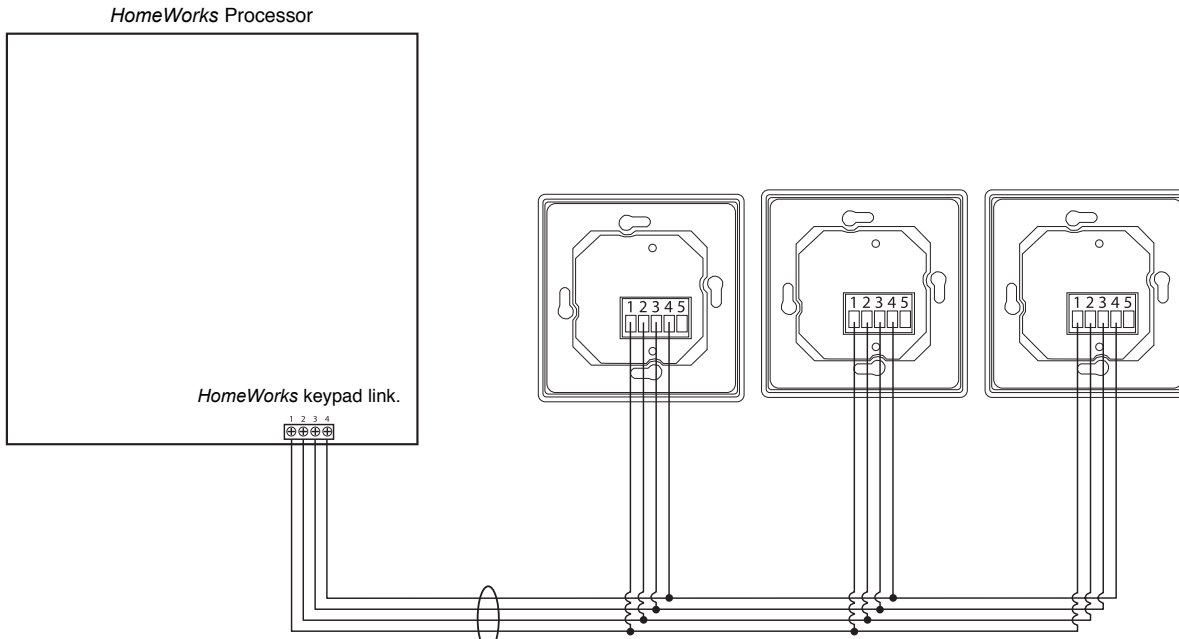
**HWBO-8SE-IR** Factory set DIP switches (do not modify).

**HWBO-4SE-IR**  
**HWBO-4SE-M**

Example: Setting Switch #1 ON.



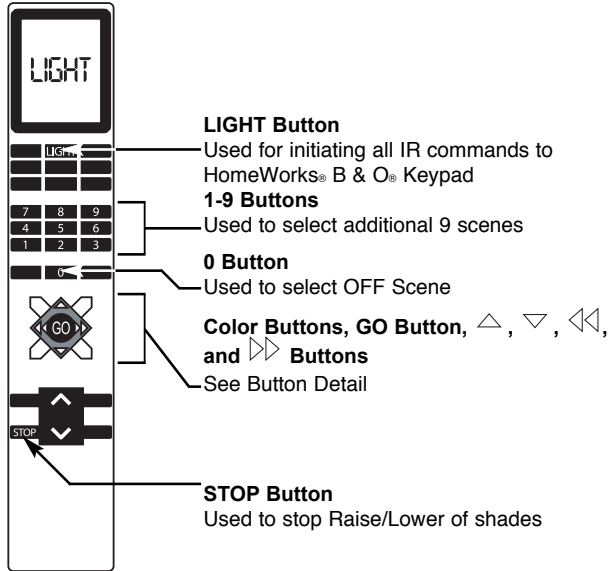
## Wiring Diagram



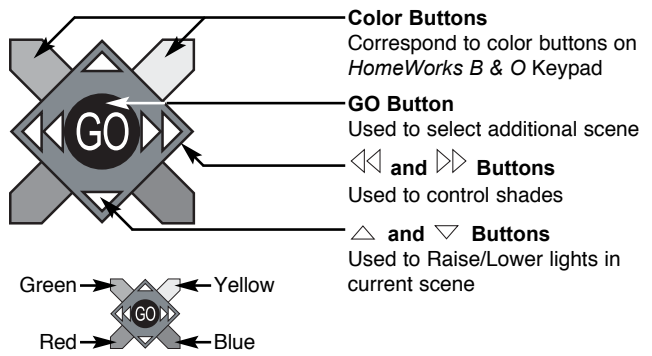
Pins 1 & 2 - 1 pair 1.0 mm<sup>2</sup> (18 AWG) for power  
Pins 3 & 4 - 1 pair 0.5 - 1.0 mm<sup>2</sup> (22-18 AWG)  
twisted/shielded for data

# Button Function (HWBO-4SE-IR and HWBO-8SE-IR only)

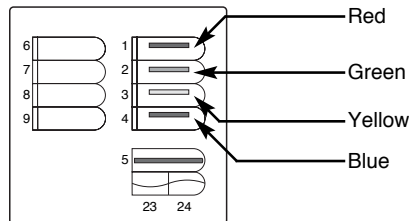
## Beo4® IR Remote Control



## Beo4 Button Detail



## Keypad Button Detail (HWBO-8SE-IR shown)



## Button Function Chart

| Beo4 Button*  | HomeWorks Keypad Button                   | Function   |
|---------------|---|--|
| Red button    | Btn 1: Red (Actual keypad button)         | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| Green button  | Btn 2: Green (Actual keypad button)       | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| Yellow button | Btn 3: Yellow (Actual keypad button)      | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| Blue button   | Btn 4: Blue (Actual keypad button)        | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| 0             | Btn 5 (Actual keypad button)              | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| GO (Play)     | Btn 10                                    | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| N/A           | Btms 6 - 9 (Actual keypad buttons on 8SE) | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| 1 - 9         | Btms 11 - 19                              | Programmable - Defaults to single action scene (can be programmed to control any zone/scene) |
| $\llcorner$   | Btn 21                                    | Used to control shades.<br>May also be programmed to control lights.                         |
| $\llcorner$   | Btn 22                                    | Used to control shades.<br>May also be programmed to control lights.                         |
| STOP          | Btn 20                                    | Used to stop raise/lower of shades.<br>May also be programmed to control lights.             |
| $\triangle$   | Btn 24 (Actual keypad button)             | Master Raise.<br>Possibly single scene raise (any specified zone/scene).                     |
| $\nabla$      | Btn 23 (Actual keypad button)             | Master Lower.<br>Possibly single scene lower (any specified zone/scene).                     |

\* Light Button must be pressed first before pressing any other button.

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## Troubleshooting Guide

Keypad is working properly when LEDs light up and loads respond as buttons are pressed.

| Symptom   | Cause and Action  |
|---|---|
| LEDs don't light up.  | Power is not present at keypad. <ul style="list-style-type: none"><li>• Make sure HomeWorks® Processor is powered up.</li><li>• Check for 15 V <math>\overline{=}</math> between pins 1 &amp; 2 on the keypad connector.</li><li>• Remove connector from back of keypad, check connections and replace.</li></ul>   |
| LEDs cycle from top to bottom sequentially.                               | Keypad is properly powered but is not communicating with the processor. <ul style="list-style-type: none"><li>• Verify that the processor is running.</li><li>• Check that keypad wires 3 &amp; 4 are properly connected.</li><li>• Check that keypad link is plugged into correct connector at processor.</li><li>• Verify that link is configured for <i>HomeWorks</i> keypads in the <i>HomeWorks</i> Utility.</li></ul> |
| LEDs light when button is pressed, but the system response isn't correct. | Keypad improperly addressed. <ul style="list-style-type: none"><li>• Check keypad for proper address. See Keypad Addressing (page 3).</li></ul> Keypad improperly programmed. <ul style="list-style-type: none"><li>• Check system programming.</li></ul>   |





## Technical Assistance

If you have questions concerning the installation or operation of this product, call **Lutron's European Headquarters**. Please provide exact model number when calling.

### Lutron EA LTD

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## LIMITED WARRANTY

Lutron EA Ltd. ("Lutron EA") warrants that each new unit will be free from defects in material and workmanship and will correspond with the specifications issued by Lutron EA and perform under normal use and service. To the extent permitted by law, Lutron EA and Lutron Electronics Company, Inc. ("Lutron") make no warranties or representations as to the units except as set forth herein. This warranty shall run for a period of two years from the date of delivery and Lutron EA's obligations under this warranty are limited to remedying any defect, or replacing any defective part, or replacement of the unit (at Lutron EA's sole option), and shall be effective only if the defective unit is shipped to Lutron EA postage prepaid within 24 months after delivery of the unit, to the extent permitted by law. After the two year period, a pro-rated warranty applies to the unit until eight years after delivery of the unit. Repair or replacement of the unit does not affect the expiry date of the warranty. This warranty does not cover damage or deficiencies due to abuse, misuse, inadequate wiring or insulation, or installation other than in accordance with instructions accompanying the unit.

Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron EA before specifying or purchasing any unit to confirm availability, exact specifications, and suitability for your application.

This warranty does not affect the statutory rights of consumer purchasers of the unit.

This product is covered under one or more of the following patents and design registrations:

In the United States: D437,834; D441,723; D442,558.

In Canada: 1,332,625; 1,331,769.

In the United Kingdom: 0587878; 2221345B; 2251727B.

In Germany: 69314585.5; 3923022.8.

In France: 0587878.

In Italy: 0587878.

In Japan: 2,819,165; 3079477.

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