

HOMEWORKS®

seeTouch™ B&O® Keypads

15 V $\overline{\text{---}}$ 65 mA NEC® Class 2; IEC PELV

STBO-4SN



STBO-4SI



STBO-4SIRN



STBO-4SIRI



Overview

The STBO-4SIRN, -4SIRI, -4SI and -4SN are for use with HomeWorks® systems. The keypad buttons are programmed using the *HomeWorks* Software. The STBO-4SIRI and -4SIRN 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. The IR receiver can also receive commands from *Beo4* buttons not available on the seeTouch® B&O Keypads,

such as ◀, ▶, **STOP**, and **GO**. Refer to Button Function Chart (page 7).

Up to 32 keypads, each with a unique address, can be connected to each keypad link on a *HomeWorks* 4 Series or 8 Series P5 Processor. Each keypad counts as 16 LEDs. A maximum of 350 keypad LEDs can be connected per 8 Series P5 Processor, and a maximum of 150 keypad LEDs can be connected per 4 Series P5 Processor. To add LED capacity, refer to the section about the Auxiliary Power Supplies in the *HomeWorks* Technical Reference Guide (P/N 360-963; in Europe, 360-963/EA).

Important Notes

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



WARNING: To avoid the risk of personal injury or property damage, 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 °C to 40 °C (32 °F to 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: see *Touch B&O* keypads may be mounted in standard U.S. wallboxes (or in *Lutron* Wallbox P/N 241-218, purchased separately). See Mounting Diagram (page 4).

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 1 220 m (4 000 ft). Up to 32 keypad devices may be placed on each processor link configured as a keypad link in the *HomeWorks* Software. 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. Plasma televisions interfere with all IR devices.

Installation

1. Disconnect power to the keypads by turning off all circuit breakers connected to the HomeWorks[®] processor or keypad link auxiliary power supply.



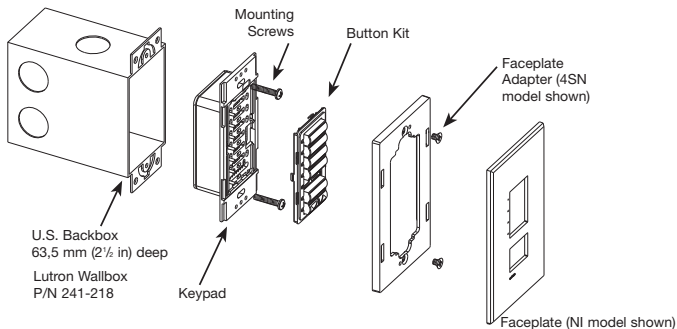
WARNING: To avoid the risk of electric shock, locate and lock supply breakers in the OFF position before wiring to terminal blocks.

Wiring with power on can result in serious injury.

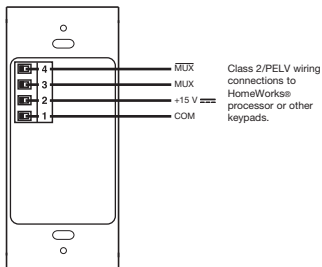
2. Address keypads. Assign a unique address to each keypad using the DIP switch on the front of the keypad. See Keypad Addressing (page 5) for DIP switch location and DIP switch settings. Be sure to record the address for future programming purposes.

3. Strip insulation from wires to 10 mm (3/8 in). Each terminal will accept one or two 1,0 mm² (18 AWG) wires.
4. Connect wiring to terminal block as shown in Wiring Diagram (page 6).
5. Mount keypad as shown in Mounting Diagram (below). **Do not over-tighten mounting screws.**
6. Restore power to the HomeWorks processor and keypad link auxiliary power supply (if used).

Mounting Diagram

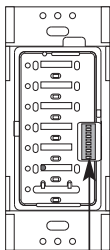


Keypad Rear View



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 through 10 do not affect the keypad address and should be always set in the up (on) position.

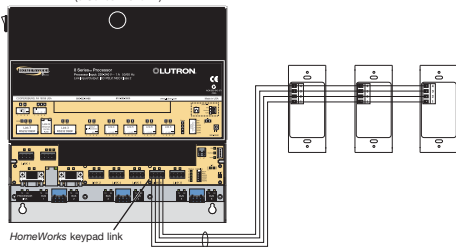
Address	Switch Settings	Address	Switch Settings	Address	Switch Settings	Address	Switch Settings
1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	
5		13		21		29	
6		14		22		30	
7		15		23		31	
8		16		24		32	

Example: Setting Switch #1 ON.



Wiring Diagram

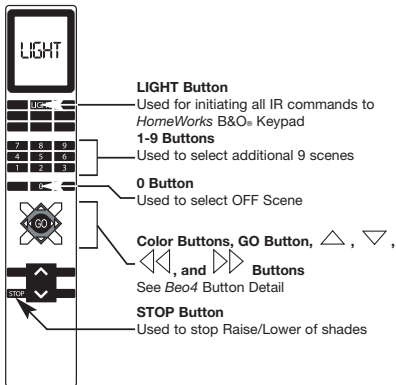
HomeWorks P5 Processor
(8 Series™ shown)



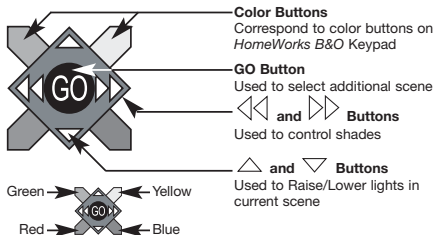
Pins 1 & 2 - 1 pair 1.0 mm² (18 AWG) for power
Pins 3 & 4 - 1 pair 0.5 mm² to 1.0 mm² (22 AWG to 18 AWG) twisted/shielded for data

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

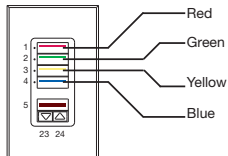
Beo4® IR Remote Control







Beo4 Button Detail



Keypad Button Detail (STBO-4SIRI 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)
1 - 9	Btms 11 - 19	Programmable - Defaults to single action scene (can be programmed to control any zone/scene)
	Btn 21	Used to control shades. May also be programmed to control lights.
	Btn 22	Used to control shades. May also be programmed to control lights.
STOP	Btn 20	Used to stop raise/lower of shades. May also be programmed to control lights.
	Btn 24: (Actual keypad button)	Master Raise. Possibly single scene raise (any specified zone/scene).
	Btn 23: (Actual keypad button)	Master Lower. Possibly single scene lower (any specified zone/scene).

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

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">• Make sure HomeWorks® Processor is powered up.• Check for 15 V $\overline{\text{---}}$ between pins 1 & 2 on the keypad connector.• Remove connector from back of keypad, check connections and replace.
LEDs cycle from top to bottom sequentially.	Keypad is properly powered but is not communicating with the processor. <ul style="list-style-type: none">• Verify that the processor is running.• Check that keypad wires 3 & 4 are properly connected.• Check that keypad link is plugged into correct connector at processor.• Verify that link is configured for <i>HomeWorks</i> keypads in the <i>HomeWorks</i> Software.
LEDs light when button is pressed, but the system response isn't correct.	Keypad improperly addressed. <ul style="list-style-type: none">• Check keypad for proper address. See Keypad Addressing (page 5). Keypad improperly programmed. <ul style="list-style-type: none">• Check system programming.
No response from the keypad when an IR remote button is pressed.	B&O® Beo4® IR Remote is in the incorrect mode. <ul style="list-style-type: none">• Press the "Light" Button before initiating any button presses from the remote. Batteries in IR remote are weak <ul style="list-style-type: none">• Replace batteries in remote. Keypad improperly programmed. <ul style="list-style-type: none">• Refer to Button Function Chart (page 7) and check system programming. Interference from plasma television. <ul style="list-style-type: none">• Move or turn off plasma television.

LIMITED WARRANTY

(Valid in the European Union and Asia)

What This Warranty Covers

Lutron warrants each new Unit to be free from defects in materials or workmanship under conditions of normal use and specified ambient temperature when installed and operated in accordance with Lutron product specifications and applicable EU and local safety regulations.

What This Warranty Does Not Cover

This warranty does not cover:

- 1) Damage or improper operation determined by Lutron to be due to abuse, misuse, or accident, such as: a. Use of incorrect line voltages; b. Use of incorrect fuses or breakers; c. Failure to follow operating instructions provided by Lutron; d. Failure to maintain and operate equipment in accordance with applicable EU and local safety regulations; e. Failure to maintain equipment under specified ambient temperature; f. Unauthorized or improper repairs or adjustments; g. Vandalism; and h. Fire, flood, "Acts of God", and other problems beyond the control of Lutron.
- 2) Labor costs to remove and reinstall electronic fixture packs and/or ballasts.
- 3) Components and equipment external to the Lutron Unit, such as: a. Lamps; b. Ballasts, sockets, and fixtures; c. Wiring between ballasts and lamps; d. Building wiring; e. Other manufacturers' equipment, such as: 1. Time clocks; 2. Audio-visual equipment; 3. Motion detectors; 4. Photosensors; 5. Driveway sensors; 6. Pressure pads; 7. Shades; and 8. Spas.
- 4) The cost of repairing or replacing property other than the warranted Unit.

What Lutron Will Do

To the extent permitted by law, Lutron will, at its option, repair or replace any Unit that is defective in materials or manufacture which, in Lutron's opinion, has been properly installed, wired, insulated, used, and maintained. Lutron shall not be required to remove, install, or re-install any defective Unit. Credit will be granted against the purchase price for replacement parts according to the following schedule:

Number of Years from Date of Installation	Percentage of Cost of Replacement Parts Credited by Lutron
Up to 2	100%
More than 2 but not more than 5	50%
More than 5 but not more than 8	25%
More than 8	0%

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; 39230022.

In France: 0587878.

In Italy: 0587878.

In Japan: 2,819,165; 3079477.

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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.

European Headquarters

Lutron EA LTD

Lutron House

6 Sovereign Close

Wapping

London, E1 9HW England

FREEPHONE: 0800-282-107 (U.K.)

Tel: +44-(0)20-7702-0657

Fax: +44-(0)20-7480-6899



Lutron Electronics Co., Inc.
Made and printed in U.S.A.
P/N 043-225 Rev. A 1/09