

Installation Instructions

Please Read Before Installing

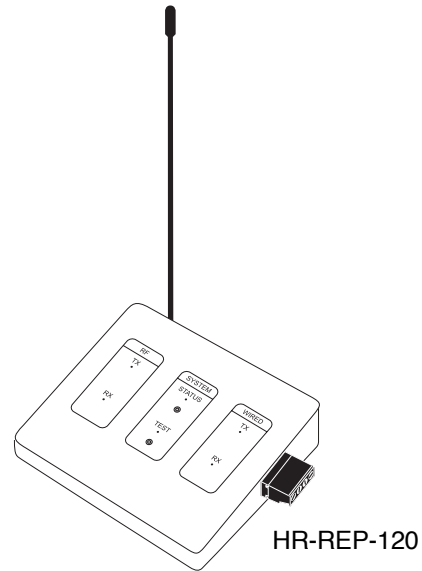
Hybrid Repeater

HR-REP-120

120 V~ 60 Hz (9 V ⎓300 mA adapter)

Overview

HomeWorks Hybrid Repeaters add RF capability to *HomeWorks* processors configured with a Hybrid Repeater Link and provide an additional coverage area for radio frequency (RF) signals sent between *HomeWorks* RF Dimmers/Switches, RF Keypads, and RF Processors. Each repeater covers a sphere of approximately 2500 square feet (232m²) of living space. Up to five (5) repeating devices may be placed in a *HomeWorks* RF system (a *HomeWorks* RF Processor counts as one of the repeating devices).



Important Notes

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

Power: The Hybrid Repeater can be powered from EITHER of two sources:

- 1. Adapter power.** Use only the adapter provided with the Hybrid Repeater (Lutron model # T120-9DC-3-WH).



Caution - Using an adapter not rated at the following specifications could damage the repeater and possibly overheat the adapter.

- Input: 120 V~ 60 Hz
- Output: 9 V⎓ 300 mA
NEC Class 2; IEC PELV

- 2. Link power.** Use only power supplied via a *HomeWorks* Processor Hybrid Repeater Link or a *HomeWorks* auxiliary power supply. (See section about the HWI-PS in the *HomeWorks* Technical Reference Guide or Application Note HW-104.) Each hybrid repeater counts as 30 LEDs.

Note: An RF Processor does not supply power on the Hybrid Repeater Link.

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

Hybrid Repeater Wiring: Hybrid Repeater wiring must be in a daisy chain configuration. The total length of wire on the Hybrid Repeater Link may be up to 1000 feet (305 m), and may contain up to five (5) Hybrid Repeaters.

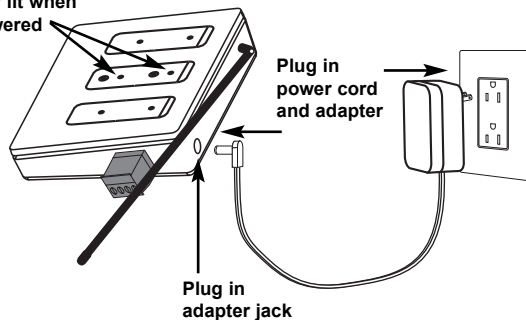
Cleaning: To clean, wipe with a clean damp cloth. **DO NOT** use any chemical cleaning solutions.

Device Placement: *HomeWorks* Hybrid Repeaters must be located within 30 feet (9 m) of the RF Dimmers, Switches, and Keypads they are covering. Hybrid Repeaters must also be within 60 feet (18 m) of an RF Processor or another repeater when using the RF Link for repeater-to-repeater or repeater-to-processor communication. When using the Wired Link for repeater-to-repeater or repeater-to-processor communication, a total wire length of 1000 feet (305 m) may be used.

Installation

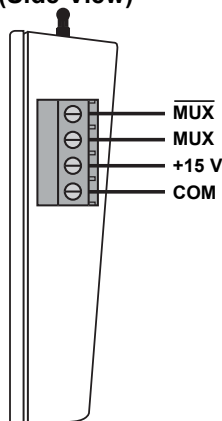
1. Find a suitable location for the Hybrid Repeater. Place the repeater in a convenient and accessible location. **Note:** Hybrid Repeaters must be within 60 feet (18 m) of an RF Processor or another repeater when using the RF Link for repeater-to-repeater or repeater-to-processor communication.
2. **Connect Hybrid Repeater Link (if applicable).** Connect the Hybrid Repeater Link communication wires from the HomeWorks® Processor (or previous Hybrid Repeater in the daisy chain) to the terminal block on the Hybrid Repeater (see Wiring Diagram). Each terminal will accept up to three 22-18 AWG (0.5-1.0 mm²) wires. **Note:** If using the plug-in adapter to power the repeater, **DO NOT** connect the +15 V terminal (terminal 2).
3. **Apply power to the Hybrid Repeater.** If the Hybrid Repeater is to be powered by the Hybrid Repeater Link, apply power by turning on the HomeWorks Processor. If the Hybrid Repeater is to be powered by the plug-in adapter, insert the adapter cord plug into the jack on the Hybrid Repeater, then plug the adapter into a standard wall receptacle.

STATUS and TEST LEDs will be dimly lit when first powered



Wiring Diagram

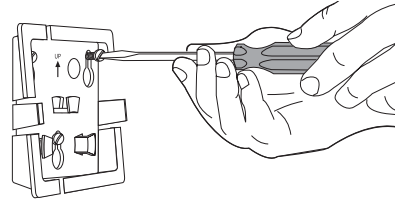
HR-REP-120
(Side View)



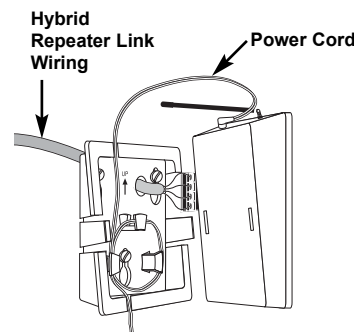
Wall Mounting

Hybrid Repeaters may be wall mounted using the supplied wall bracket.

1. Attach wall bracket to wall using the supplied screws and wall anchors.



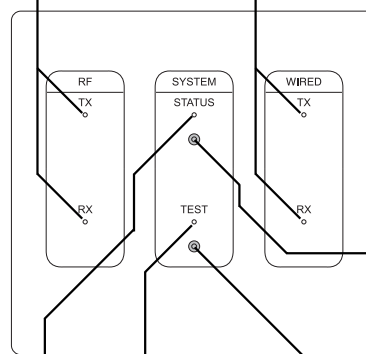
2. Place power cord into notches at top and bottom of wall bracket. Wrap excess power cord around the cord holder. Route Hybrid Repeater Link wiring through hole in wall bracket and out through side cutout. Align repeater and snap onto wall bracket.



Operation

RF TX/RX LEDs
Indicate RF Link activity.

WIRED TX/RX LEDs
Indicate Wired Link activity.



TEST LED
A slow flash indicates RF communications tests are in progress

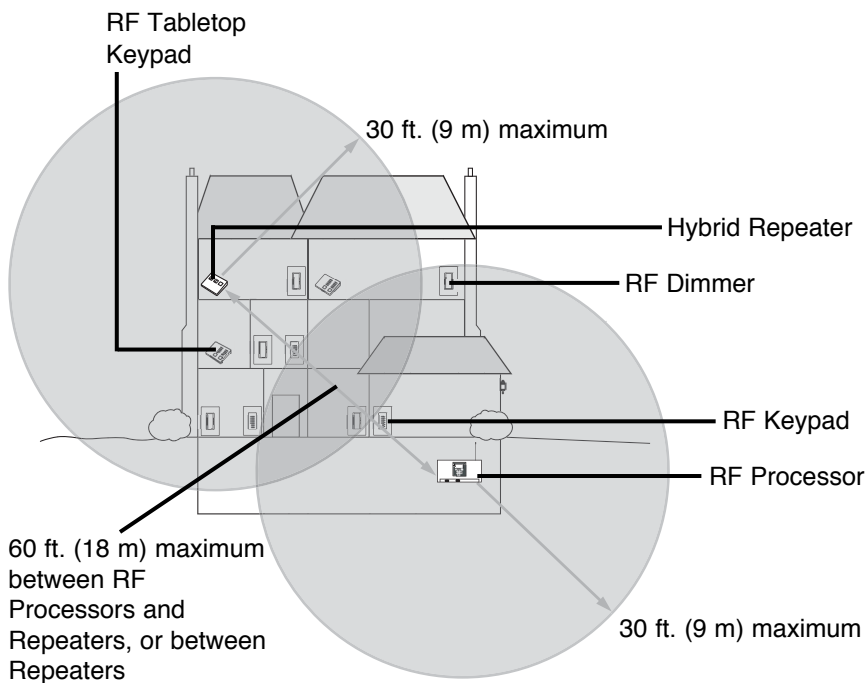
STATUS LED
Indicates the status of the HomeWorks system.
Note: When the Hybrid Repeater is powered, but has not yet been assigned an address from the HomeWorks Illumination Software, the STATUS and TEST LEDs will be dimly illuminated.

STATUS Button
Used when addressing the Hybrid Repeater from the HomeWorks Illumination™ Software.

TEST Button
Activates RF communication tests. To activate the tests, press and hold the TEST Button until the TEST LED begins to flash.
Note: For communication tests, the Hybrid Repeater, HomeWorks Processor, and other RF devices must first be configured and addressed using the HomeWorks Illumination Software.

System Communications

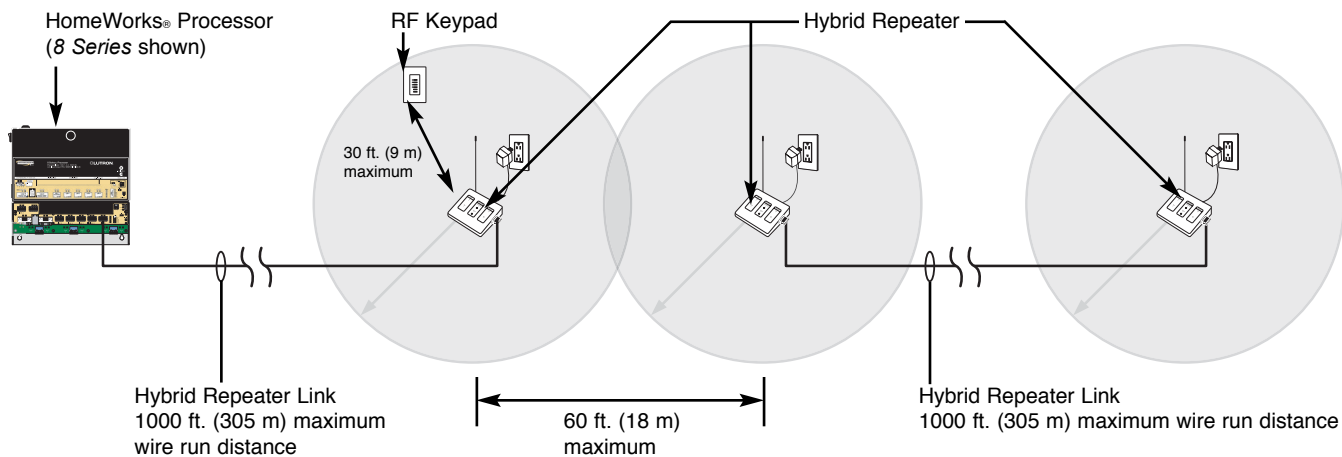
RF Communications



RF Communications Notes

- Hybrid Repeaters must be located within 30 feet (9 m) of the RF Dimmers/Switches and Keypads they are covering.
- Hybrid Repeaters must also be within 60 feet (18 m) of an RF Processor or another repeater.
- Multiple repeaters may be necessary to provide adequate coverage. Up to four (4) repeaters may be used with each RF Processor, and up to five (5) Hybrid Repeaters may be used with each 8 Series™ Processor or 4 Series™ Processor (equipped with Hybrid Repeater Link).

Hybrid Repeater Link (Wired) Communications



Troubleshooting Guide

Symptom	Cause and Action
No LEDs are illuminated on the Hybrid Repeater.	No power available to unit. <ul style="list-style-type: none"> • If powered by the 9 V \equiv plug-in adapter, verify there is power to the adapter. • If powered by the Hybrid Repeater Link, verify link wiring.
Button presses on the Hybrid Repeater cause the STATUS LED on the repeater to flash rapidly.	Repeater has not been addressed. <ul style="list-style-type: none"> • Address the repeater using the HomeWorks® Illumination™ Software.

FCC Information

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by Lutron Electronics Co. could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules.

Operation is subject to the following:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Technical and Sales Assistance

If you need assistance, call the toll-free **Lutron Technical Support Center**. Please provide exact model number when calling.
 (800) 523-9466 (U.S.A., Canada and the Caribbean)
 Other countries call:
 Tel: (610) 282-3800
 Fax: (610) 282-3090
 Visit our Web site at www.lutron.com

LIMITED WARRANTY

Lutron will, at its option, repair or replace any unit that is defective in materials or manufacture within two years after purchase. After the two year period, a pro-rated warranty applies to this product until eight years after the purchase. For warranty service, return unit to place of purchase or mail to Lutron at 7200 Suter Rd., Coopersburg, PA 18036-1299, postage prepaid. Telephone the Lutron Technical Support Center toll free at 800-523-9466. For more information regarding this warranty contact your Lutron representative.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, AND THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO TWO YEARS 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. This product may be covered by one or more of the following U.S. patents: 4,835,343; 5,736,965; 5,838,226; 5,848,054; 5,905,442; 5,982,103; D389,805; D404,013 and corresponding foreign patents. U.S. and foreign patents pending. Lutron and HomeWorks are registered trademarks and Illumination is a trademark of Lutron Electronics Co., Inc.
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