

**FEATURES**

**1. JR1 REMOTE:** Locking XLR and ¼" combo jack used to connect a remote switch. Use with footswitches, MIDI contact closures or the Radial JR1.

**2. REMOTE LINK:** Used to link the switching of additional Relay Xo units. Allows stereo and multi-channel switching systems.

**3. MIC/LINE INPUT:** Balanced XLR input. The Relay Xo signal path is 100% passive. Audio signals will pass through unchanged without added noise or distortion.

**4. OUTPUT-B:** Alternate balanced XLR output. This output is active when the select switch is pressed inward or when a remote switch is closed. The B LED illuminates when the output is active.

**5. OUTPUT-A:** Main balanced XLR output. This output is active when the switch is in the outward position or when a remote switch is open. The A LED illuminates when the output is active.

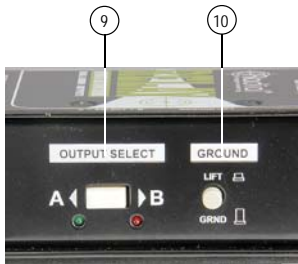
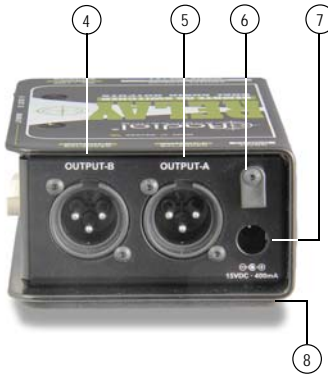
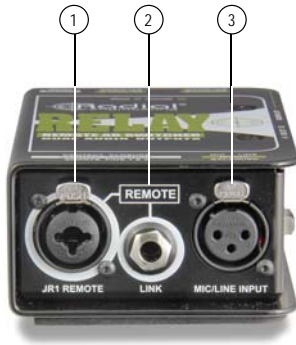
**6. CABLE CLAMP:** Prevents accidental power disconnection by locking down the AC adapter cable.

**7. POWER JACK:** Connection for the included 15 volt (400mA) AC power adapter

**8. FULL-BOTTOM NO-SLIP PAD:** This provides electrical isolation and plenty of 'stay-put' friction to keep the Relay Xo in one place.

**9. OUTPUT SELECT:** This switch toggles the Relay Xo's outputs. Two LED indicators display which output is active.

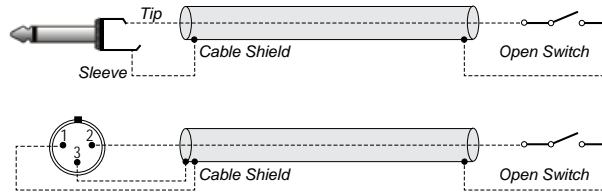
**10. GROUND LIFT:** Disconnects pin-1 (ground) on the input XLR jack to help reduce hum and buzz caused by ground loops.



**Relay Xo specifications**

Audio circuit type: .....	Passive balanced A/B switcher
Switch: .....	Electronically controlled relay
XLR input and outputs: .....	AES standard; pin-1 ground, pin-2 (+), pin-3 (-)
Ground lift: .....	Lifts pin-1 on the XLR input
Power: .....	15V/400mA, 120V/240 power adapter included

**Wiring diagram for custom JR1 REMOTE switch**



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**RELAY<sup>TM</sup> Xo**  
REMOTE AB SWITCHER



**USER GUIDE**

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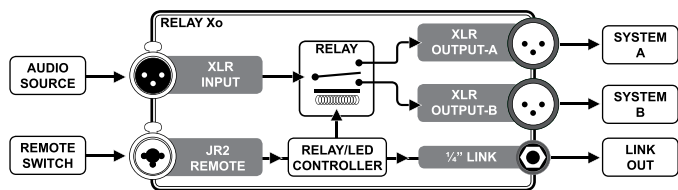
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## OVERVIEW

Thank you for purchasing the Radial Relay Xo, a simple yet effective switching device designed to toggle a microphone or other balanced audio signal between two channels on a PA system. As with all products, getting to know the feature set is essential if you intend to get the most out of the Relay. Please take a minute to read through this short manual. If you are left with unanswered questions, feel free to send us an email at [info@radialeng.com](mailto:info@radialeng.com) and we will do our best to reply in short order. Now get ready to remotely switch to your heart's content!

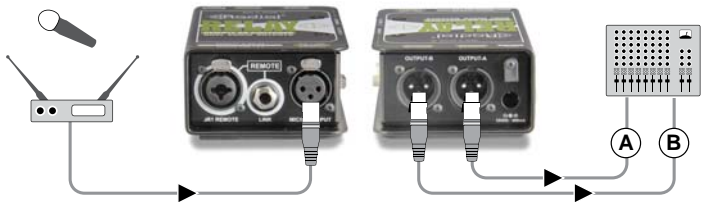
The Relay is basically a 1-in, 2-out straight-wire switcher for balanced audio. There is no transformer or buffering circuitry in between the input and outputs. This means the Relay Xo can not introduce distortion or noise into the source signal and allows it to be used with mic or line level sources. A link feature allows multiple Relay Xo units to be combined and switch stereo or multi-channel audio systems. Switching can be done on the Relay Xo, via remote footswitch or by MIDI contact closure.



## MAKING CONNECTIONS

Before making any connections, make sure volume levels are turned off or down and/or power is turned off. This will help you avoid turn-on or power-on transients that could harm more sensitive components like tweeters. There is no power switch on the Relay. Simply plug in the included 15 VDC supply and it will spring to life. A cable clamp next to the power jack can be employed to prevent accidental disconnection.

The audio input and outputs employ balanced XLR connections wired to the AES standard with pin-1 ground, pin-2 hot (+), and pin-3 cold (-). Connect your source device such as a microphone or wireless mic receiver to the Relay Xo input jack. Connect the A and B outputs to two inputs on a mixer.



Switching between the outputs can be done using the OUTPUT SELECT push button on the side panel. Start by setting up channel-A. Set the AB selector switch set to the A position (outward). Speak into the mic while slowly bringing up the volume levels. To set up the channel-B depress the AB selector switch to toggle the output. The LED indicators illuminate to display the active output.

## REMOTE CONTROL

The Relay Xo's outputs may be toggled remotely using an external 'latching' or 'momentary' switch connected to the 'JR1 REMOTE' jack. This combo jack features a locking XLR and 1/4" input. The 1/4" connection works with any standard footswitch such as a momentary sustain pedal or a latching amplifier channel switch. It can also work with any device equipped with a 1/4" contact-closure output like a MIDI controller.



Simple footswitches and contact-closure devices like MIDI controllers use 1/4" cables to connect to the Relay Xo.

Both the combo jack's XLR and 1/4" connection work with the optional Radial JR1 footswitches. The JR1 footswitches are also equipped with locking XLR jacks allowing you to use either type of cable. Locking connectors are beneficial on busy stages as it reduces the opportunity for a connection to come loose during a performance. The JR1 footswitches are available in momentary (JR1-M) or latching (JR1-L) formats to address various needs on stage and include A/B LED status indicators.

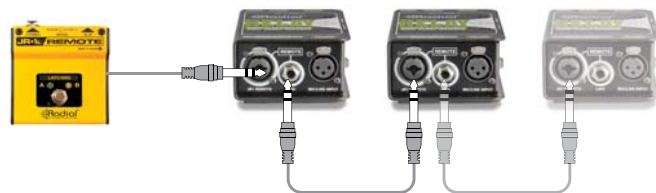


The JR1 uses either 1/4" or locking XLR cable to connect to the Relay Xo.

Because footswitches are either momentary or latching it's important to understand how the Relay Xo works with these two types of switches. A **momentary footswitch**, like the JR1-M or a keyboard sustain pedal, will toggle to output-B only while held down. Once the momentary footswitch is released the Relay Xo will toggle back to output-A. A **latching footswitch**, like the JR1-L or an amplifier AB channel selector switch will toggle the Relay each time it is pressed. One press will toggle to output-B. Pressing again will toggle back to output-A.

## MULTI-CHANNEL SWITCHING

Two or more Relay Xo units can be switched in tandem by simply bridging the devices together using a standard 1/4" patch cable. The LINK feature allows switching of stereo and multi-channel audio systems from a single switch. Connect a footswitch to the first unit or use the side panel OUTPUT SELECT switch. Connect the 1/4" LINK jack on the first unit to the JR1 REMOTE jack on the second. You can connect as many successive units as you like this way.

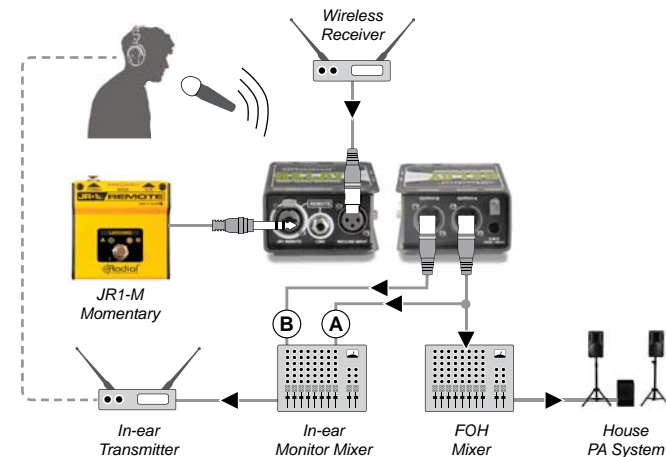


JR1-M or JR1-L

1/4" Link Cables

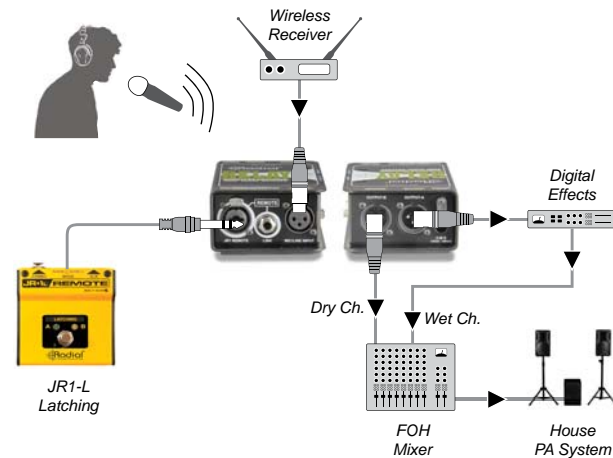
## USING THE RELAY XO FOR A TALK-BACK SYSTEM

A momentary footswitch, like the optional JR1M, is recommended when using the Relay Xo as a talk-back or communication mic switcher as this requires holding the footswitch 'on' to speak with other band members or the crew. Releasing the footswitch reverts back to normal. This avoids accidentally leaving the Relay on 'communication mode' which could otherwise prove to be embarrassing if left on.



## USING THE RELAY XO TO SWITCH MIXER CHANNELS

Using a latching switch, like the optional JR1L, is suggested when switching between audio channels on a PA system. Switching channels lets you alternate between a dry channel for communication with the audience and a wet channel with echo and reverb for singing.



JR1-L Latching