**XR-4**

**XTENDED RANGE**

**FOUR CHANNEL**

**SUPERVISED STATIONARY RECEIVER**

For Use With Linear’s XR Series Xtended Range Transmitters

**Installation Instructions**

**1. PRODUCT DESCRIPTION**

Linear’s Xtended Range FM receivers and transmitters are designed for use in various wireless remote control applications. When the Model XR-4 receiver detects a signal from its companion transmitter, it will verify the digital code, activate the correct output channel, and trigger the remote device connected to the receiver.

The XR-4 receiver has full supervision capabilities. If the “status” option is selected, the receiver expects hourly status signals from its transmitter. If these signals cease, the receiver will indicate trouble by activating its status output after four hours. Contact supervision allows the receiver’s output to follow the transmitter’s inputs, each output staying activated as long as each transmitter input is activated. Alternatively, an “auto-restore” option can be selected in the transmitter, causing a momentary receiver output each time any transmitter input is activated. If the transmitter sends a low battery signal, the receiver’s low battery output will activate.

Power for the XR-4 receiver can come from an external 12 VDC power supply (Linear Model T-1224DC) or from a 12-volt battery. A diode protects the unit from reverse power polarity.

The XR-4 draws about 30 mA standby, and about 190 mA when all outputs are active. The receiver outputs provide isolated N/O and N/C relay contacts for each channel capable of switching a maximum of 1 Amp @ 32 VDC each. The low battery and status outputs are solid state and are capable of switching up to 50 mA @ 20 VDC to ground.

Two antennas (sold separately) are available for the XR-4. The Model ANT-1A is an 8-inch “rubber duck” antenna for short range applications (less than 1 mile). The ANT-1A requires a CON-90A straight-thru connector to make the antenna to the transmitter. For a right angle antenna, use the CON-180A plus the CON-90A. The Model ANT-2 is a 3-foot whip antenna for use in long range or difficult installations where more range from the XR-4 is required. A common 9-foot 1/4 wave CB whip antenna can also be used with the XR-4 for maximum range.

Two 8-position switches set the unit’s system code. This code must be matched in the XR-4’s transmitter(s). There are 65,536 different system codes possible. The 4-position option switch selects the status supervision option for each channel.

The receiver is housed in a rugged weather-resistant metal enclosure with a sturdy SO-239 strength and audio monitoring.

**2. OPEN RECEIVER**

- Remove four case screws and slide out circuit board
- Board fits in 3rd slot up
- Reference card fits in 1st slot
- End cap stays attached to the circuit board
- Case screws

**3. COMPONENT LOCATIONS**

ANTENNA CONNECTOR (HIDDEN)

TEST POINTS

SYSTEM CODE SWITCHES

SWITCH “Y”

SWITCH “B”

SWITCH “A”

RF SIGNAL INDICATOR (RED)

POWER SIGNAL INDICATOR (GREEN)

POWER & OUTPUT TERMINAL BLOCK

**4. INSTALLATION TIPS**

**GOOD INSTALLATION**

- Use ANT-1A antenna for short range applications (less than 1 mile)
- Use ANT-2 antenna for maximum range or difficult applications
- Good antennas need good grounds
- Power & signal wires

**BAD INSTALLATION**

- Use of improper or excessive power/signal wires will reduce the effective range
- Antennas and mounting brackets not properly aligned will reduce effective range
- Good antennas need good grounds

**5. MOUNT RECEIVER CASE**

If using the ANT-1A antenna: For best range mount the XT/XR unit to a metal plate with a minimum size of 12” x 12”. The ANT-1A antenna should extend above the mounting plate and be free of obstructions. If the ANT-1A antenna cannot be mounted in the open, consider using an extension coaxial cable with PL-259 connectors to move the antenna’s location.

The XT/XR series of radios operate in the 27 MHz Citizens Band (CB) and may use any CB antennas or CB antenna accessories. Antennas, PL-259 extension cables and other adapters are available at Radio Shack® or other electronics stores.

**IMPORTANT**

- Mount the unit with two bottom screws (don’t install top screws until wiring is complete)
- The unit should be mounted in a sheltered location with access to antenna coax and power/ground wires

**Linear**

USA & Canada (800) 421-1587 & (800) 392-0123
Toll Free FAX (800) 468-1340
www.linearcorp.com

4375 Marylin Drive • Vista, CA 92081
USA & Canada (760) 438-7000 • FAX (760) 438-7043
INSTR,INSTL,XR-4
MATERIAL: 20 LB. MEAD BOND
SCALE: 1-1
SIDE 1 OF 2 (FRONT)

**LINEAR’S XTENDED RANGE FM RECEIVERS AND TRANSMITTERS ARE DESIGNED FOR USE IN VARIOUS WIRELESS REMOTE CONTROL APPLICATIONS. WHEN THE MODEL XR-4 RECEIVER DETECTS A SIGNAL FROM ITS COMPANION TRANSMITTER, IT WILL VERIFY THE DIGITAL CODE, ACTIVATE THE CORRECT OUTPUT CHANNEL, AND TRIGGER THE REMOTE DEVICE CONNECTED TO THE RECEIVER.**
6. SET RECEIVER SWITCHES

**SYSTEM CODE SWITCHES**

- Set system code switches A & B to match system code switches A & B in the transmitter.

**OPTION SWITCH**

- Use 18-24 AWG wire to connect power and outputs.

7. CONNECT POWER AND OUTPUTS

**ROUTE WIRES THROUGH CASE**

- Use straight connector.

**STRAIN RELIEF BUSHING BEFORE CONNECTING TO TERMINALS**

8. MOUNT ANTENNA AND ROUTE CABLE

**MOUNT ANTENNAS AS HIGH AS POSSIBLE**

- A metal mounting pole is recommended.

**CON-180A + CON-90A ANGLE CONNECTOR**

9. TEST SYSTEM

**WARNING**

- An 18-foot RG-58 cable is supplied with the Ant-2 kit. Up to 50 feet of RG-58 can be used.

**IMPORTANT!!!**

- Linear radio controls provide reliable communications links and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- **WARNING:** THIS PRODUCT IS NOT TO BE USED IN LIFE SAFETY APPLICATIONS.

10. COMPLETE INSTALLATION

**INSTALL THE TWO REMAINING MOUNTING SCREWS**

**INSTALL THE RECEIVING UNIT**

**SECURE END PLATE BY INSTALLING THE FOUR CASE SCREWS**

**APPLY POWER AND TRIGGER THE TRANSMITTERS INPUT**

**THE TRANSMIT INDICATOR SHOULD LIGHT WHEN THE TRANSMITTER IS TRIGGERED**

**THE RECEIVER SIGNAL INDICATOR SHOULD LIGHT AND OUTPUT SHOULD ACTIVATE**

**TIGHTEN WIRING STRAIN RELIEF BUSHING TO SECURE AND WEATHER PROOF WIRING**

**TEST SYSTEM AGAIN AFTER COMPLETING INSTALLATION**

**LINEAR LIMITED WARRANTY**

This Linear product is warranted against defects in material and workmanship for twelve (12) months. The Warranty Expiration Date is labeled on the product.

This warranty extends only to wholesale customers who buy direct from Linear or through Linear’s normal distribution channels. Linear does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer’s warranty, if any. There are no obligations or liabilities on the part of Linear LLC for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation. All implied warranties, including implied warranties of merchantability and implied warranties of fitness, are valid only until Warranty Expiration Date as labeled on the product. This Linear LLC Warranty is in lieu of all other warranties express or implied. All products returned for warranty service require a Return Product Authorization Number (RPA). Contact Linear Technical Services at 1-800-421-1587 for an RPA and other important details.

**IMPORTANT!!!**

- Linear radio controls provide a reliable communications link and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- **WARNING:** THIS PRODUCT IS NOT TO BE USED IN LIFE SAFETY APPLICATIONS. FCC Rules allow unlicensed high-power transmissions at or near the operating frequency of this product which may interfere with, or even disable, normal operation of the radio device.

- For U.S. installations only. The radios are required to comply with FCC Rules and Regulations as Part 95 Radio Control devices. As such, they have limited transmitter power and therefore limited range.

- A receiver cannot respond to more than one transmitted signal at a time and may be blocked by radio signals that occur or near their operating frequency. Negligible of other settings.

- Changes or modifications to the device may void FCC compliance.

- Infrequently used radio links should be tested regularly to protect against undetected interference or fault.

- A general knowledge of radio and its vagaries should be gained prior to acting as a wholesale distributor or dealer, and these facts should be communicated to the ultimate users.