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PRODUCT INFORMATION BULLETIN

AIR-EAGLE® XLT 900 MHz RF Receiver MODEL 441P-8-ESTOP-DC

DESCRIPTION

The AIR-EAGLE XLT is an RF system designed for long range wireless remote control of electrical apparatus in a variety of industrial applications. This receiver has been specifically designed for E-Stop applications. It links with an E-stop transmitter for failsafe operation. Dip switches allow the user to select link-loss shutdown times, relay operation and whether power must be recycled to reset the system. The relays can switch up to 5 amps @ 120VAC or 30VDC and can be directly interfaced with the customer's equipment or P.L.C. Seven user selectable frequencies allow multiple systems to be used in the same area. This receiver is capable of receiving remote signals transmitted from up to 2500 feet away.

INSTALLATION

DISCONNECT DC Power from all equipment before installation.

1. Mount the AIR-EAGLE XLT RECEIVER in a convenient location.
2. Select options & frequency (See OPTIONS & FREQUENCY SET-UP)
3. Install relay wiring to terminal strip.
4. Install antenna onto connector located on the right side on the enclosure.
5. Connect supplied power input cable to your external power source.

TERMINAL STRIP WIRING

1	N/O Relay #1	7	N/O Relay #3	13	(-) 9-36VDC INPUT
2	C Relay #1	8	C Relay #3	14	(+) 9-36VDC INPUT
3	N/C Relay #1	9	N/C Relay #3		
4	N/O Relay #2	10	N/O Relay #4		
5	C Relay #2	11	C Relay #4		
6	N/C Relay #2	12	N/C Relay #4		

GENERAL OPERATION

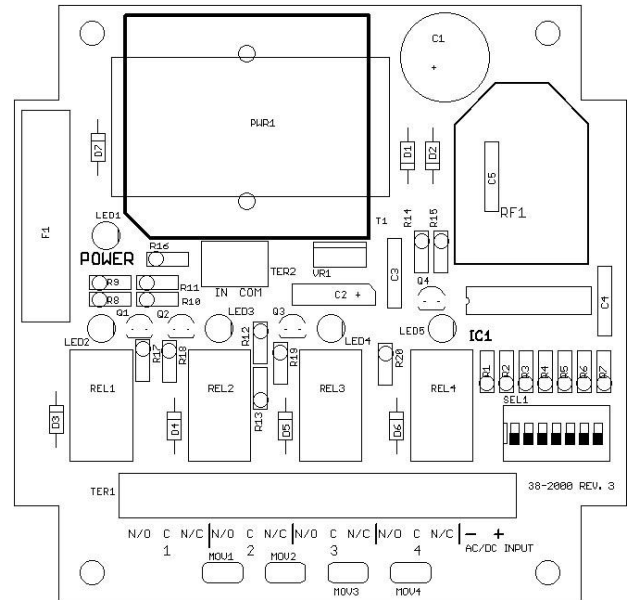
Prior to operation the user selects various options that control the link-loss shutdown, relay activation and system reset. (See OPTIONS & FREQUENCY SET-UP).

When power is applied to the receiver, all relays will be in their de-energized state. When power is applied to the E-stop transmitter, it immediately begins sending a beacon signal that causes all relays in the receiver to energize, indicating the communications link. Upon an E-stop command, the selected relays immediately de-energize. Upon specified link-loss time, the selected relays de-energize. The system will then need to be manually reset or will automatically come back online as designated by the system operation option selected.



Dimensions (with mounting plate) 6.3" L x 4.8" W x 2.3" H

CONTROLS AND INDICATORS



LED1	Illuminated when power is applied to receiver
LED2	Illuminated when relay #1 is energized
LED3	Illuminated when relay #2 is energized
LED4	Illuminated when relay #3 is energized
LED5	Illuminated when relay #4 is energized
RF1	RF module that receives data from the remote transmitter
REL1 thru REL4	Four SPDT output control relays

AIR-EAGLE® XLT

900 MHz RF Receiver

MODEL 441P-8-ESTOP-DC

OPTIONS & FREQUENCY SET-UP

The unit is shipped from the factory with all SEL1 switches in the open positions. By default, the link-loss shutdown time is set to .5 seconds; power must be recycled to reset the system following an E-stop event; all relays respond to either E-stop command; and the unit is operating on Frequency #1. If you wish to select different options and/or change the frequency, follow the instructions on the table below.

- 1) Remove power from unit
- 2) Remove top cover.
- 3) Select desired options and/or frequency using table below.
- 4) Reattach cover and apply power.
- 5) Programming is now complete.

LINK-LOSS SHUTDOWN				
SEL1 (SW1-2)	Link-Loss Shutdown Time in Seconds	SW1	SW2	
	0.5 (default)	OPEN	OPEN	
	0.25	CLOSED	OPEN	
	1	OPEN	CLOSED	
	1.5	CLOSED	CLOSED	
SYSTEM RESET OPTIONS				
SEL1 (SW3)	System Reset Requirement	SW3		
	Power must be recycled to receiver following any E-stop event (default)	OPEN		
	Relays revert to energized state upon release of E-stop button and resumption of communication link	CLOSED		
RELAY RESPONSE OPTIONS				
SEL1 (SW4)	Relay Response to E-Stop Event	SW4		
	All four relays de-energize upon E-stop command OR link-loss (default)	OPEN		
	Relays 1 & 2 de-energize upon E-stop command; Relays 3 & 4 de-energize upon link loss	CLOSED		
FREQUENCY SET-UP				
SEL1 (SW5-7)	Network Frequency	SW5	SW6	SW7
	1 (default)	OPEN	OPEN	OPEN
	2	CLOSED	OPEN	OPEN
	3	OPEN	CLOSED	OPEN
	4	CLOSED	CLOSED	OPEN
	5	OPEN	OPEN	CLOSED
	6	CLOSED	OPEN	CLOSED
	7	OPEN	CLOSED	CLOSED

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SPECIFICATIONS

Power Supply	9-36 VDC, 5 W
Fuse Protected	2 amp
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC
Receiver Range	Up to 2500 feet when using handheld transmitter / Up to 2 miles when using stationary transmitter & external high gain antennas
<i>Note: Range figures are estimates, based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, and terrain between receiver and transmitter, including, but not limited to, indoor and outdoor structures such as walls, metal objects, trees, buildings, hills, and mountains.</i>	
Receiver Frequency	902 – 928 MHz Spread Spectrum
RF Networks	Eight Independent Network Frequencies
Enclosure	Polycarbonate, NEMA 4, IP66
Operating Temp	-40° F - +185° F

APPROVALS

United States (FCC)	MCQ-XB900HP
Canada (IC)	1846A-XB900HP

ACCESSORIES

Standard Antenna (Included):	
900MHz TNC "Rubber Duck" Antenna	49-1103
High Gain Antennas – Used to help achieve max range in both non line of sight and line of sight applications. - Contact BWI Eagle for recommendations	
900MHz Thru-Hole Mount Omni Directional Antenna	49-2101
900MHz Magnet Mount Omni Directional Antenna	49-2102
900MHz Omni Directional Antenna	49-3101
900MHz Yagi Antenna	49-3102
High Quality Coax Cables – Used to connect external high gain antennas to control unit	
Flex Coax Cable w/Connectors – Available in 5', 15', 25', 30', 40', 60', 80', 100' Lengths	49-4000-XX (XX = # of Feet)
Bulkhead Extensions – Used to provide an external antenna connection when mounting control unit inside another enclosure	
TNC Male to TNC Bulkhead Cable Assembly - Available in 2', 4', 7' Lengths	49-5004-X-ISO (X = # of Feet)

LIMITED WARRANTY STATEMENT

BWI Eagle Inc. warrants the Air-Eagle Remote Control System, if properly used and installed, will be free from defects in material and workmanship for a period of 1 year after date of purchase. Said warranty to include the repair or replacement of defective equipment. This warranty does not cover damage due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing. This limited warranty, and any implied warranties that may exist under state law, apply only to the original purchaser of the equipment, and last only for as long as such purchaser continues to own the equipment. This warranty replaces all other warranties, express or implied including, but not limited to, the implied warranties or merchantability and fitness for a particular purpose. BWI Eagle makes no express warranties beyond those stated here. BWI disclaims without limitation, implied warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not allow the exclusion of implied warranties so this limitation may not apply to you. To obtain warranty service, contact BWI Eagle for a return material authorization. When returning equipment to BWI Eagle, the customer assumes the risk of damage or loss during shipping and is responsible for the shipping costs incurred.

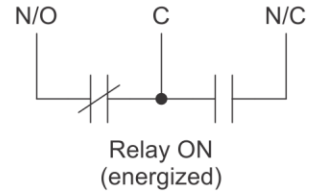
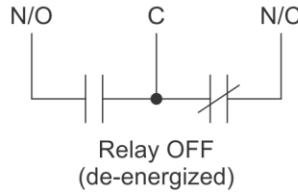


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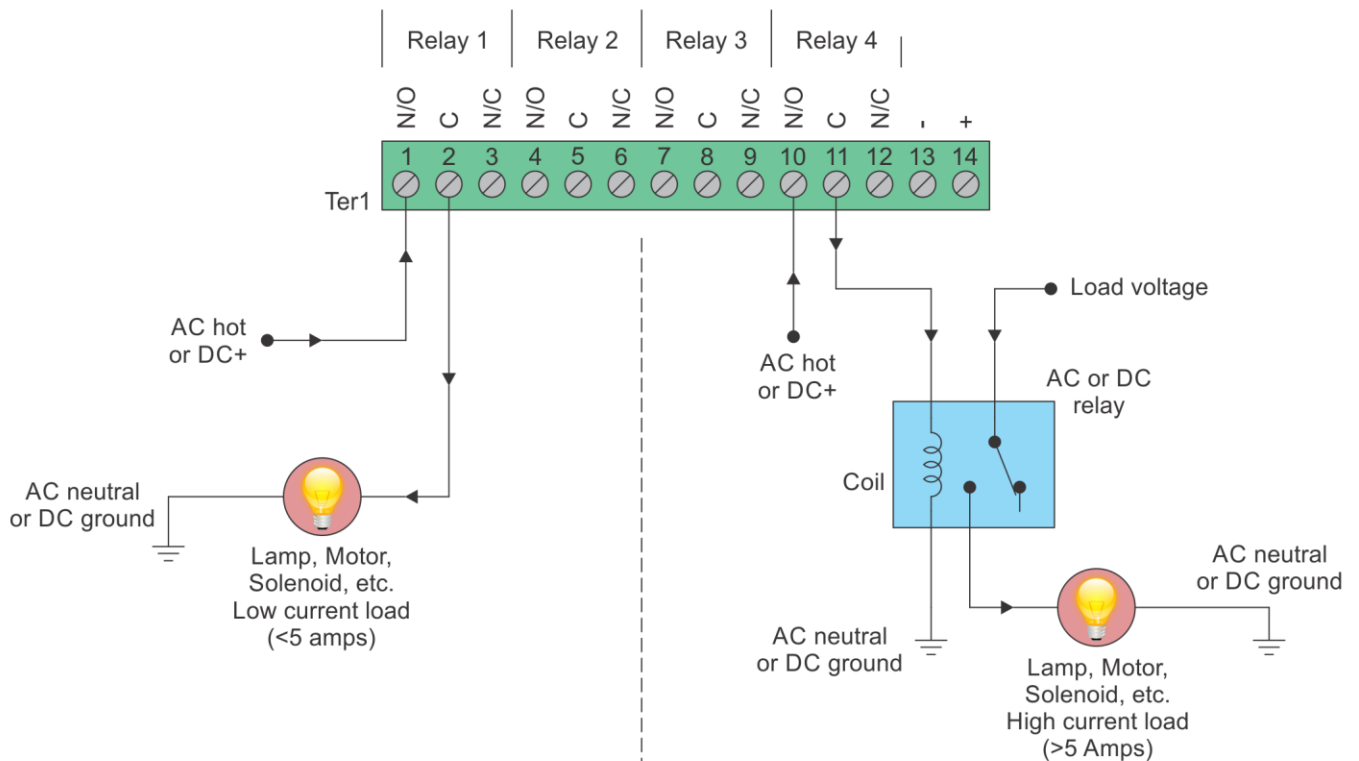
RELAY OUTPUT WIRING

4-Relay Receiver

Receiver outputs are dry relay contacts, like an SPDT switch. When the relay is in a de-energized state, the N/C (normally closed) contact is connected to C (common). When the relay is energized the N/O (normally open) contact is connected to C (common).



Normally Open Application with Externally Supplied Voltage



Internal Relay - Loads Less Than 5 Amps

Loads up to 5 Amps may be wired directly to the internal relays. Wiring to the N/O contact will cause the load to turn on when the relay is energized (the load is on when the relay is on). Wiring to the N/C contact will cause the load to turn on when the relay is de-energized (the load is on when the relay is off). AC or DC voltages can be switched through the relay.

External Relay - Loads Over 5 Amps

Loads over 5 Amps must use an external high current relay. Diagram shows how to turn on the relay using the lower current internal relay of the receiver. AC or DC voltages can be switched through the relay. Note: A protection diode for DC coils or an MOV for AC coils is recommended to reduce inductive EMI noise.

Wiring configurations shown here are examples. The wiring for your application may differ.
Call BWI Eagle for assistance or consult an electrician.