BWI EAGLE
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PRODUCT INFORMATION BULLETIN

AIR-EAGLE® XLT
900MHz RF Receiver
MODEL 441-21600

DESCRIPTION

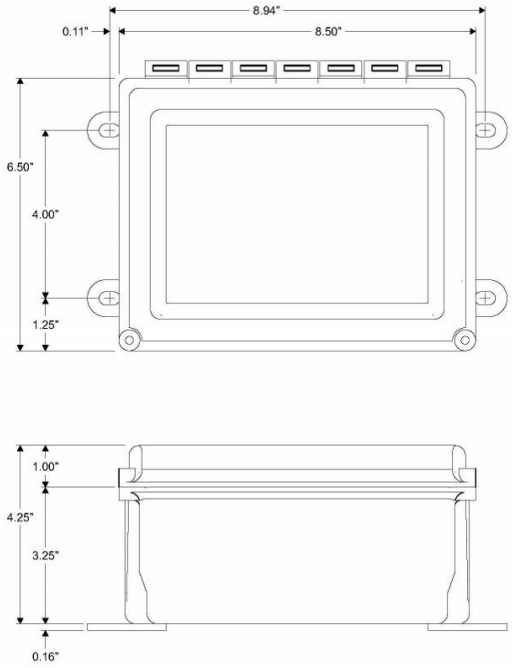
The AIR-EAGLE XLT is an RF system designed for medium to long range wireless remote control of electrical apparatus in a variety of industrial applications. Systems can consist of any number of receivers and handheld or contact input transmitters working together. This receiver is equipped with 16 independent relays that can switch 5 amps @ 120VAC or 30VDC. The relays are user programmable for momentary or toggle/latching operation 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. Capable of receiving remote signals transmitted from up to 2500 feet away (with the handheld transmitter) or up to 4 miles away (with the contact input transmitter), the Air-Eagle XLT utilizes spread-spectrum technology and provides the utmost security and reliability even in the noisiest RF environments.

INSTALLATION

DISCONNECT AC Power from all equipment before installation.

1. Mount the AIR-EAGLE XLT RECEIVER in a convenient location.
2. Install relay wiring to terminal strip.
3. Install antenna onto connector located on the right side on the enclosure.
4. Connect AC power to the proper terminals in your control circuit.

DIMENSIONS



TERMINAL STRIP WIRING

BOTTOM BOARD					
1	N/O Relay #1	10	N/O Relay #4	19	N/O Relay #7
2	C Relay #1	11	C Relay #4	20	C Relay #7
3	N/C Relay #1	12	N/C Relay #4	21	N/C Relay #7
4	N/O Relay #2	13	N/O Relay #5	22	N/O Relay #8
5	C Relay #2	14	C Relay #5	23	C Relay #8
6	N/C Relay #2	15	N/C Relay #5	24	N/C Relay #8
7	N/O Relay #3	16	N/O Relay #6		
8	C Relay #3	17	C Relay #6		
9	N/C Relay #3	18	N/C Relay #6		

TOP BOARD					
1	N/O Relay #9	10	N/O Relay #12	19	N/O Relay #15
2	C Relay #9	11	C Relay #12	20	C Relay #15
3	N/C Relay#9	12	N/C Relay #12	21	N/C Relay #15
4	N/O Relay #10	13	N/O Relay #13	22	N/O Relay #16
5	C Relay #10	14	C Relay #13	23	C Relay #16
6	N/C Relay #10	15	N/C Relay #13	24	N/C Relay #16
7	N/O Relay #11	16	N/O Relay #14		
8	C Relay #11	17	C Relay #14		
9	N/C Relay #11	18	N/C Relay #14		

AC INPUT	
Terminal #1	120 VAC - (Neutral)
Terminal #2	120 VAC - (Hot)

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SERIES FEATURE

The “441” Series features repeating capability. Transmitters can be set up to send “repeat signal packets”, and any transmitter or receiver within its range will repeat the signal packet to help propagate communication over widespread areas.

APPROVALS

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

GENERAL OPERATION

Relays #1 thru #16 energize or de-energize based on specific commands from a handheld or contact input transmitter.

BUTTON OR INPUT ACTIVATED	RELAY OPERATION
"1"	Relay #1 energizes, maintained momentary
"2"	Relay #2 energizes, maintained momentary
"3"	Relay #3 energizes, maintained momentary
"4"	Relay #4 energizes, maintained momentary
“5”	Relay #5 energizes, maintained momentary
“6”	Relay #6 energizes, maintained momentary
“7”	Relay #7 energizes, maintained momentary
“8”	Relay #8 energizes, maintained momentary
"9"	Relay #9 energizes, maintained momentary
"10"	Relay #10 energizes, maintained momentary
11"	Relay #11 energizes, maintained momentary
"12"	Relay #12 energizes, maintained momentary
“13”	Relay #13 energizes, maintained momentary
“14”	Relay #14 energizes, maintained momentary
“15”	Relay #15 energizes, maintained momentary
“16”	Relay #16 energizes, maintained momentary

SPECIFICATIONS

AC Input	120 VAC, 16 W, 50/60 Hz
Fuse Protected	1 amp
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC per channel
Receiver Range	Approximately 2500 feet (Up to 4 miles with external antenna - see accessories)
Receiver Frequency	900 MHz Spread Spectrum
RF Channels	Seven independent network frequencies
Enclosure	Hinged fiberglass with window / NEMA 3, 3R, 4, 12, 13
Operating Temp	-40º F to +185º F

DOCUMENT DATE: 12/12/2019 / PRODUCT REV. 4

RELAY & FREQUENCY SET-UP

This unit is shipped from the factory with SEL1 switches #1 and #2 in the open positions. All sixteen relays will operate in a maintained momentary manner, and unit is receiving commands on frequency one. If you wish to change these default settings, follow the instructions on the table below.

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

RELAY CONFIGURATION

SEL1 SWITCH NUMBER	OPEN	CLOSED
SW1	Relays #1 thru #8 maintained momentary (default)	Relays #1 thru #8 toggle/latch
SW2	Relays #9 thru #16 maintained momentary (default)	Relays #9 thru #16 toggle/latch
Maintained Momentary – Relay mimics button or input – when depressed or closed, relay will be energized; when released, relay de-energizes **Toggle Latch** – Relay changes (and holds) its state each time the corresponding button or input is depressed or closed.		
SW3	Vibrating Feedback OFF (default)	Vibrating Feedback ON
SW4	Not used on this model	

FREQUENCY SET-UP

	Network Frequency	SW5	SW6	SW7
SEL1 (SW5-7)	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

REPLACEMENT PARTS & ACCESSORIES

PC Board (Main)	441-21602
Standard Antenna (Included):	
900MHz Portable Antenna (For distances up to 2500 feet*)	49-1103
Optional Antennas and Accessories:	
900MHz Omni Directional Antenna (For distances up to 2 miles*)	49-3101
900MHz 13dB Yagi Antenna Long Range Operation (For distances up to 4 miles*)	49-3102
Flex Coax Cable w/Connectors	49-4000-XX (XX = # of Feet)
* = Line of Sight	

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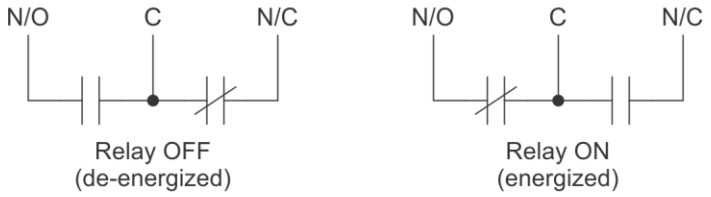
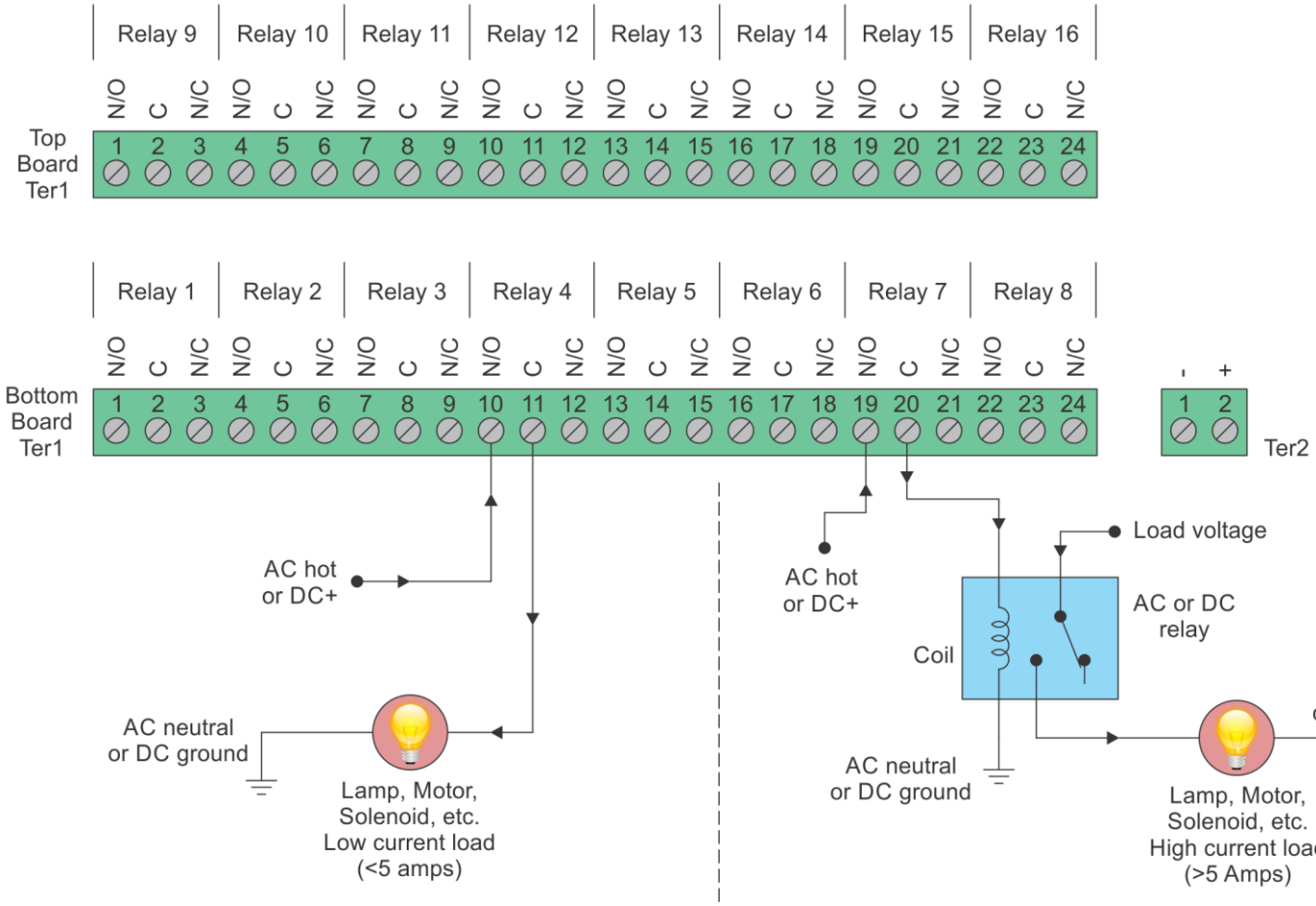
RELAY OUTPUT WIRING
16-Relay Receiver

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.

Updated: 4/29/2019