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PRODUCT INFORMATION BULLETIN

AIR-EAGLE® XLT 900MHz RF Receiver MODEL 44UL-20800-DC

DESCRIPTION

The Air-Eagle XLT is a UL/CSA approved 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 8 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.

Please read through this document in its entirety before proceeding with installation.

INSTALLATION

DISCONNECT DC Power from all equipment before installation.

1. Mount the control unit in a suitable location that allows the user to easily remove the lid of the enclosure for wiring access. When possible select a location that is not directly beside high energy transformers or large inductive relay housings. It is recommended to allow for a minimum of 2.0" clearance on all sides of the unit's housing & mounting plate. The power and control wiring exiting thru the provided cord grips should have ample room to bend without excessive stress. It is also important that any coax cable connected to the TNC connector have room to bend without "kinking".
2. Install relay wiring to terminal strip (TER2).
3. Attach supplied rubber duck antenna to TNC connector on the right side of the unit.
4. Connect DC power to the proper terminals in your control circuit.

Note 1: (4) 1/4-20 thru holes are provided on the mounting feet to secure the unit)

Note 2: The recommended power/control wire sizes to the terminal strip ranges from 24 AWG (0.205mm²) (min) to 18 AWG (0.823mm²) (max).



TERMINAL STRIP WIRING (TER2)

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		

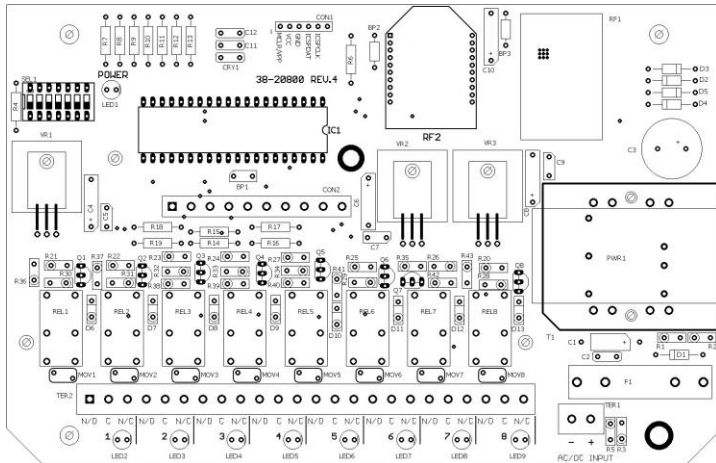
DC INPUT (TER1)	
Terminal #1	Negative (-) 10 – 24 VDC INPUT
Terminal #2	Positive (+) 10 – 24 VDC INPUT

AIR-EAGLE® XLT

900MHz RF Receiver

MODEL 44UL-20800-DC

CONTROLS & INDICATORS



POWER LED	Dual color LED. Illuminates red while receiver is booting up; changes to green when boot-up is successful and unit is ready to operate. If this LED fails to turn green, power unit off for 15-20 seconds, then reapply power.
RELAY LEDS	Illuminated green while relay is energized
DIP SWITCHES	Switches used to set user-selectable options and/or network frequency
EEPROM CHIP	Socket mounted integrated circuit that holds unit's program
RF MODULE	RF Module that sends/receives data from our transmitters/receivers

RELAY MODES OF OPERATION

Auto Reset (Maintained Momentary)
When signal is received from an authorized transmitter, the relay will energize. The relay will maintain the energized state as long as the transmitter is sending the signal. The relay de-energizes when the transmitted signal stops.
Toggle Reset (Toggle Latch)
When a signal is received from an authorized transmitter, the relay will energize and latch. The relay stays energized until the same signal is received again, at which time it unlatches and de-energizes.
Latching Reset (True Latch)
When a signal is received from an authorized transmitter, the relay will energize and latch. The relay stays energized until a different signal is received from the transmitter, at which time it unlatches and de-energizes. i.e. – Transmission from Input 1 of authorized transmitter energizes and latches relay 1. Transmission from Input 2 of an authorized transmitter de-energizes relay 1.

RELAY & FREQUENCY SET-UP

This unit is shipped from the factory with the SEL1 switches in the open positions. All eight 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	Not used on this model			
SW3	Vibrating Feedback OFF (default)		Vibrating Feedback ON	
SW4	Not used on this model			
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

UL SPECIFICATIONS & CLASSIFICATIONS

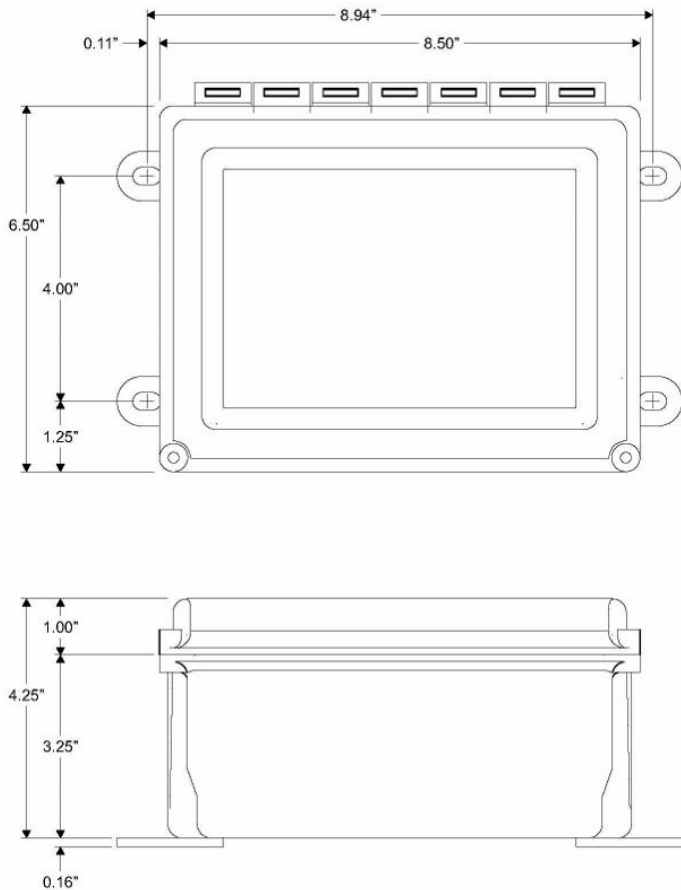
SPECIFICATIONS	
DC Input	10 – 24 VDC @ 10 Watts
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC
Fuse Protected	1 amp
Receiver Frequency	900 MHz Spread Spectrum
Receiver Range	Approximately 2500 feet (Up to 4 miles with external high gain antenna)
Receiver Channels	Eight independent network frequencies
Operating Temperature	-10° C to +55° C
Altitude	Under 2000 meters
Enclosure	Polycarbonate, IP66 Approved
Weight	Approx 2 lbs.
CLASSIFICATIONS	
Automatic Control and Electrically Operated Control	
Incorporated Control and an Independently Mounted Control	
Type 1.C Action; Micro-Interruption	
PTI of Materials Used for Insulation: Material Group IIIb	
Electrical Shock Risk: Class II Control	
Period of Electrical Stress Across Insulating Parts Supporting Live Parts: Long Period	
Pollution Degree 2	
Number of Cycles of Activation: 30,000 (Relay)	

AIR-EAGLE® XLT

900MHz RF Receiver

MODEL 44UL-20800-DC

DIMENSIONS



REPLACEMENT PARTS & ACCESSORIES

PC Board (Main)	44UL-20802-DC
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	

APPROVALS

UL/CSA Approved	
United States (FCC)	MCQ-XB900HP
Canada (IC)	1846A-XB900HP

REPAIR STATEMENT

NO USER SERVICEABLE PARTS! RETURN TO THE MANUFACTURER FOR SERVICE.

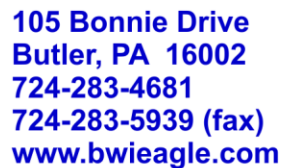
LIMITED WARRANTY STATEMENT

BWI Eagle Inc. warrants the Air-Eagle XLT 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.

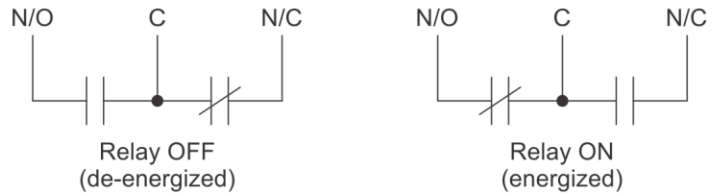
DOCUMENT DATE: 11/9/18 / PRODUCT REV.4



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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).



The diagram illustrates a relay terminal block with 24 terminals, organized into 8 groups of 3 (N/O, C, N/C) for Relays 1 through 8. A dashed vertical line separates the terminals into two sections. The left section (Terminals 1-12) is labeled 'Ter1' and shows a wiring configuration for a low current load (<5 amps). The right section (Terminals 13-24) is labeled 'Ter2' and shows a wiring configuration for a high current load (>5 Amps).

Ter1 (Low current load, <5 amps):

- Terminal 10 (N/O) is connected to 'AC hot or DC+'.
- Terminal 11 (C) is connected to 'AC neutral or DC ground'.
- The load (Lamp, Motor, Solenoid, etc.) is connected between these two terminals.

Ter2 (High current load, >5 Amps):

- Terminal 19 (N/O) is connected to 'AC hot or DC+'.
- Terminal 20 (C) is connected to 'AC neutral or DC ground'.
- The load (Lamp, Motor, Solenoid, etc.) is connected between these two terminals.
- A separate 'AC or DC relay' coil is shown, connected to terminals 19 and 20.
- The load is connected to the common terminal of the relay switch, which is also connected to 'AC neutral or DC ground'.

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.

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.

Updated: 4/29/2019