

# AIR-EAGLE XLT

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# 441-10100-AC

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## 900 MHz RF Transmitter



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Product Rev: 6

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**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.

**SIGNAL RANGE**

Max range statements are estimates based on a clear line of sight with few interferences. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting and receiving antennas, weather conditions, electronic interference, terrain, and physical obstacles, including but not limited to; walls, building structures, trees (foliage), metal objects, and landscape (hills, mountains).



**WIRELESS STOP, ASTOP, and E-STOP SYSTEMS**

Wireless E-STOP systems should never be considered a primary life-saving device. At least one hard-wired switch must be available in the event the wireless system is not operational. Failure to comply may result in serious injury or death to personnel and damage to equipment.



Wireless STOP and ASTOP transmitters are not failsafe emergency stop controls. They are NOT to be used as a life-saving device. They are designed for wireless control of equipment or vehicle remote operation. Failure to use as intended may result in serious injury or death to personnel and damage to equipment.



## 441-10100-AC



### INTRODUCTION

The Air-Eagle XLT is an RF system designed for 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 to create a long range radio frequency system that operates hazardous or hard-to-reach equipment from safe, convenient locations.

Eight user selectable frequencies allow multiple systems to be used in the same area without interference.

This transmitter is equipped to send one independent dry-contact input command to an Air-Eagle XLT receiver located up to 2500 feet away. Longer ranges can be achieved with external antennas (See ACCESSORIES section). The Air-Eagle XLT transmitter utilizes spread-spectrum technology and provides the utmost in security and reliability.

### 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.

### GENERAL OPERATION

A closure on the input transmits a command to activate relay 1 in the remote receiver (or another relay as selected by the channel code transmitted). The transmission continues as long as the input is closed and ceases when the input opens.

# 441-10100-AC

## INSTALLATION

1. **DISCONNECT** power from all equipment before proceeding with installation.
2. Mount the transmitter in a convenient location.
3. Install input control wiring to the terminal strip. (See TERMINAL STRIP WIRING section.)
4. Make desired channel code, repeater mode, and frequency selections. (See SETUP section.)
5. Attach rubber duck antenna or coax from external antenna to connector on side of enclosure.
6. Connect supplied power input cable to external power source.

## TERMINAL STRIP WIRING

|                                   |   |                         |
|-----------------------------------|---|-------------------------|
| <b>Ter3<br/>DRY CONTACT INPUT</b> | 1 | 100-250 VAC Power Input |
|                                   | 2 | 100-250 VAC Power Input |
| <b>Ter2<br/>RELAY OUTPUT</b>      | 1 | Not used on this model  |
|                                   | 2 |                         |
|                                   | 3 |                         |
| <b>Ter1<br/>AC/DC POWER INPUT</b> | 1 | 100-250 VAC Power Input |
|                                   | 2 | 100-250 VAC Power Input |
|                                   | 3 | Ground                  |

## APPROVALS

|                     |                     |
|---------------------|---------------------|
| United States (FCC) | MCQ-XB900HP         |
| Canada (IC)         | 1846A-XB900HP       |
| Australia           | RCM                 |
| Brazil              | ANATEL 3727-12-1209 |

## 441-10100-AC

### CHANNEL CODE, FREQUENCY, & REPEATER MODE SETUP

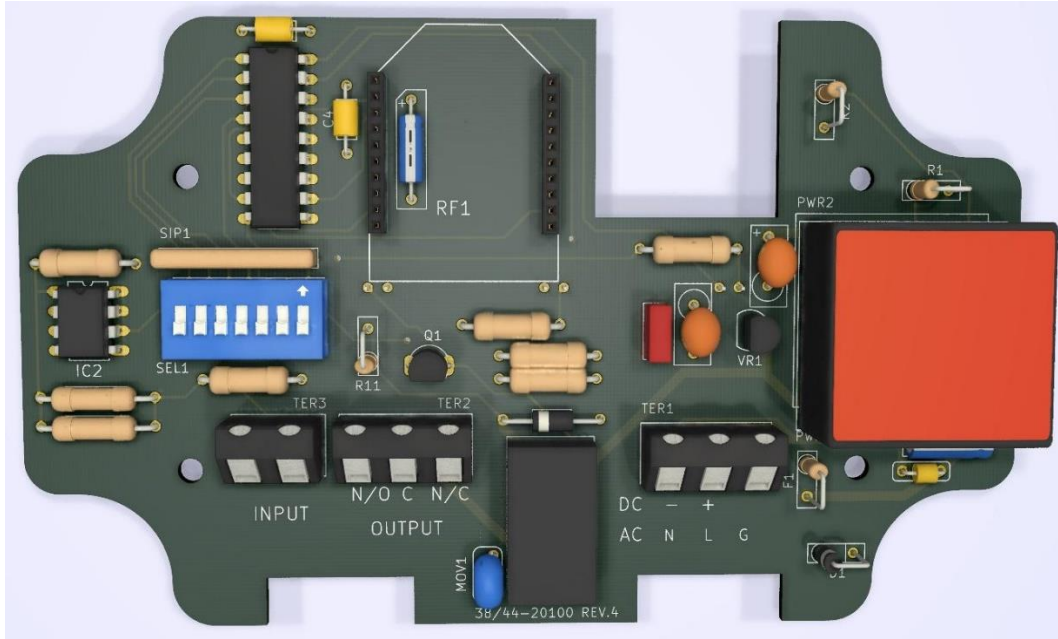
The unit is shipped from the factory with SEL1 switches in the open positions. It is transmitting channel 1 code, repeater mode is off, and the unit is sending commands on frequency 1. To change default settings, follow the instructions below:

1. **\*IMPORTANT\***  
Disconnect power from unit.
2. Remove top cover.
3. Select desired settings using the table.
4. Reattach cover.
5. Reconnect power to unit.
6. Programming is complete.

| CHANNEL SELECTION SETUP  |        |        |        |
|--------------------------|--------|--------|--------|
| CHANNEL CODE TRANSMITTED | SW1    | SW2    | SW3    |
| 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 |
| 8                        | CLOSED | CLOSED | CLOSED |
| REPEATER MODE SETUP      |        |        |        |
| REPEATER MODE ON/OFF     | SW4    |        |        |
| OFF (default)            | OPEN   |        |        |
| ON                       | CLOSED |        |        |
| FREQUENCY SETUP          |        |        |        |
| 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 |
| 8                        | CLOSED | CLOSED | CLOSED |

# 441-10100-AC

## CONTROLS & INDICATORS



|                     |  |
|---------------------|--|
| <b>POWER – LED1</b> | Illuminates green when unit is powered                                   |
| <b>TX – LED2</b>    | Illuminates red when unit is transmitting                                |
| <b>RELAY – LED3</b> | Not used on this model   |
| <b>RF1</b>          | RF Module that transmits/receives data                                   |
| <b>SEL1</b>         | Dip switches for selecting channel, repeater mode, and frequency options |
| <b>TER3</b>         | Dry contact input  |
| <b>TER2</b>         | Relay output   |
| <b>TER1</b>         | Power input  |

# 441-10100-AC

## SPECIFICATIONS

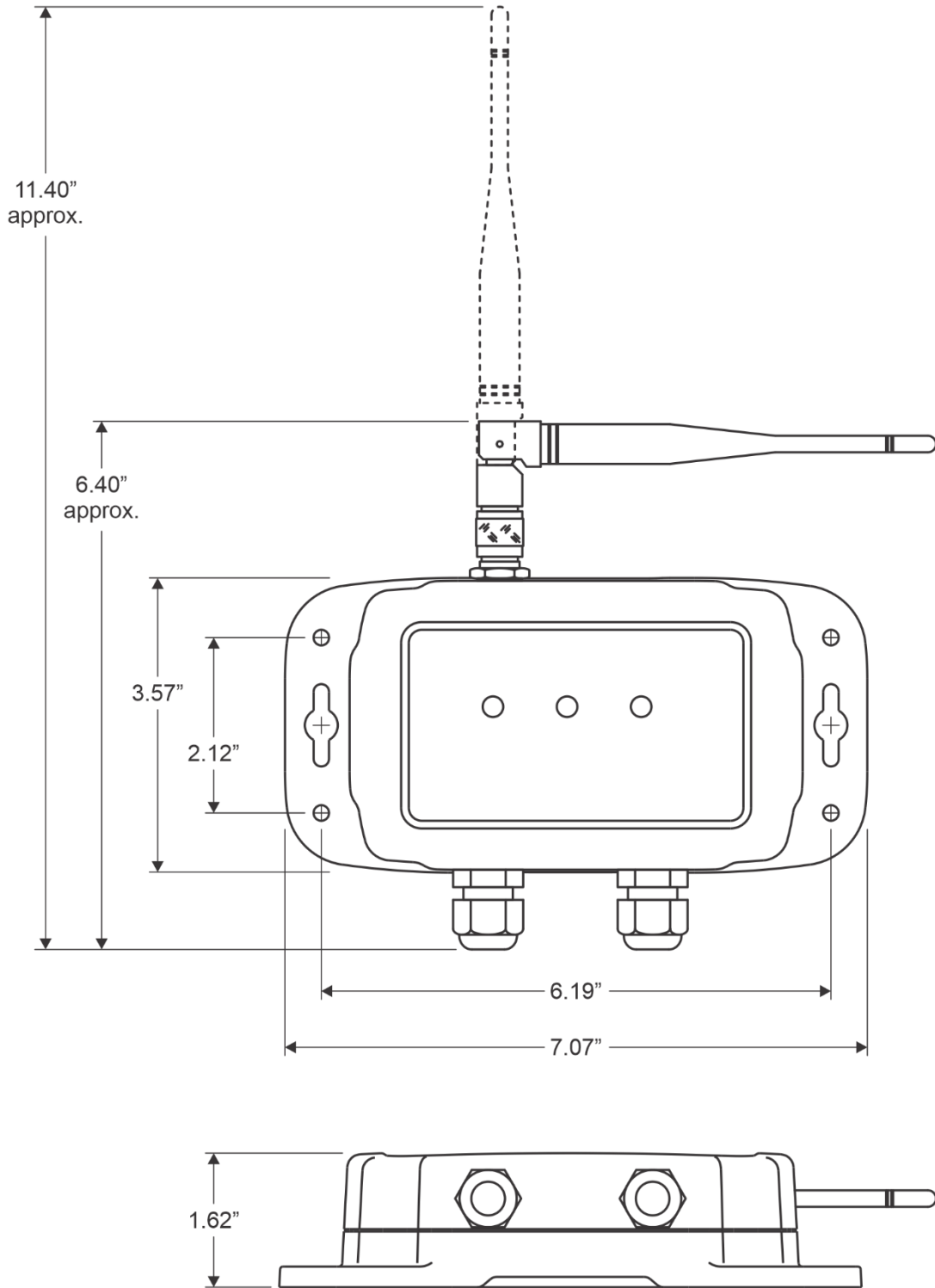
|   |                                       |
|---|---------------------------------------|
| <b>Power Supply</b>   | 100-250 VAC, 5 W, 50/60 Hz            |
| <b>Frequency</b>  | 900 MHz Spread Spectrum               |
| <b>RF Output Power</b>  | 250 mW                                |
| <b>Range</b>  | Up to 2500 feet *                     |
| <b>Transmit Data</b>  | Dry Contact Input                     |
| <b>RF Networks</b>  | Eight Independent Network Frequencies |
| <b>Operating Temperature</b>  | -40° F to +185° F                     |
| <b>Enclosure</b>  | Polycarbonate, IP66 (NEMA 4, 12, 13)  |
| <p>*Note: Max range statements are estimates based on a clear line of sight with few interferences. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting and receiving antennas, weather conditions, electronic interference, terrain, and physical obstacles, including but not limited to; walls, building structures, trees (foliage), metal objects, and landscape (hills, mountains).</p> |                                       |

## ACCESSORIES

| <b>STANDARD ANTENNA (INCLUDED)</b>  |                                       |
|---|---------------------------------------|
| 900MHz TNC Portable "Rubber Duck" Antenna   | 49-1103                               |
| <b>MOBILE/BASE ANTENNAS (OPTIONAL)</b><br>Used to help achieve max range in non-line-of-sight and line-of-sight applications.<br>Contact BWI Eagle for recommendations. |                                       |
| 900MHz Thru-Hole/Bracket Mount Mobile Antenna   | 49-2101                               |
| 900MHz Magnet Mount Mobile Antenna  | 49-2102                               |
| 900MHz Omni Directional Base Antenna  | 49-3101                               |
| 900MHz Yagi Directional Base Antenna  | 49-3102                               |
| <b>HIGH QUALITY COAX CABLE</b><br>Used to connect external antennas to control unit.  |                                       |
| Flex Coax Cable w/Connectors<br>(Available in 5', 15', 25', 30', 40', 60', 80', and 100' lengths)   | 49-4000-XX<br>(XX = length in feet)   |
| <b>BULKHEAD EXTENSION</b><br>Used to provide an external antenna connection when mounting control unit<br>inside another enclosure.                                     |                                       |
| TNC Male to TNC Bulkhead Cable Assembly<br>(Available in 2', 4', and 7' lengths)  | 49-5004-X-ISO<br>(X = length in feet) |

# 441-10100-AC

## DIMENSIONS







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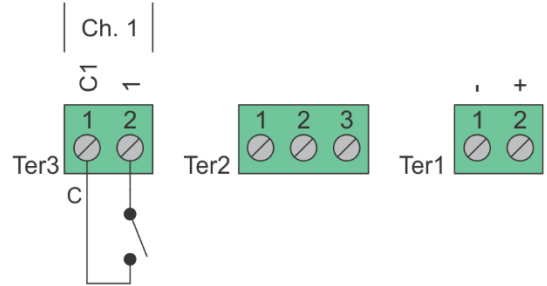
# INPUT/OUTPUT WIRING

## 1-Input Transmitter / 1-Relay Receiver

### Dry Contact Input Wiring - Standard

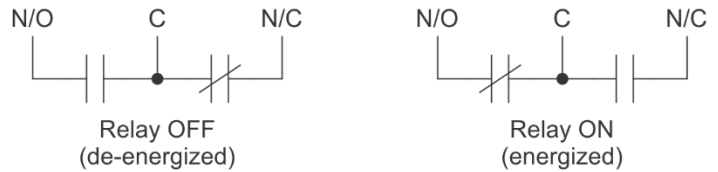
#### Standard wiring of a dry contact input transmitter

Shorting together the contacts of the respective channel will cause it to transmit. This can be done with any type of manual or automatic switch.

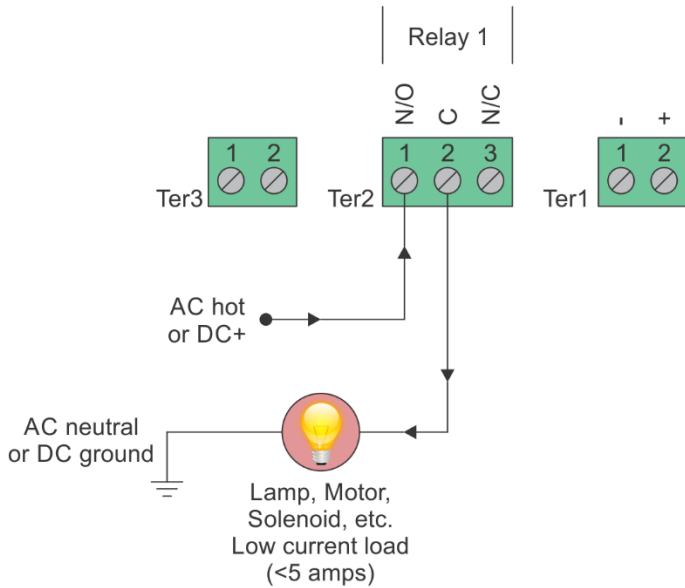


### Relay Output Wiring

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).

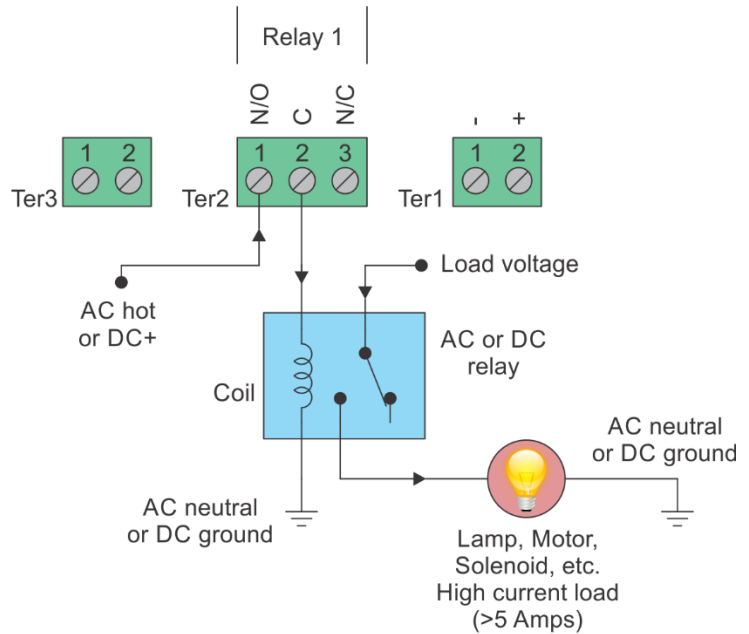


### Relay Output Wiring - Normally Open Application with Externally Supplied Voltage



#### 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.