



105 Bonnie Drive  
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# PRODUCT INFORMATION BULLETIN

## AIR-EAGLE® XLT PLUS High Power 900MHz RF Transceiver THREE CONTACT INPUT / OUTPUT MODEL 461-6000-DC

### DESCRIPTION

The AIR-EAGLE XLT PLUS RF TRANSCEIVER provides two-way wireless control of electronic equipment and apparatus at distances up to 1 mile away (longer ranges can be achieved with external antennas). This model comes equipped with three dry contact inputs and three relay outputs. This allows the user to not only transmit information out but receive a confirming signal back that the operation was performed. The Air-Eagle XLT TRX is user-programmable for up seven network frequencies to allow multiple systems to operate simultaneously in the same area.

### APPROVALS

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

### INSTALLATION

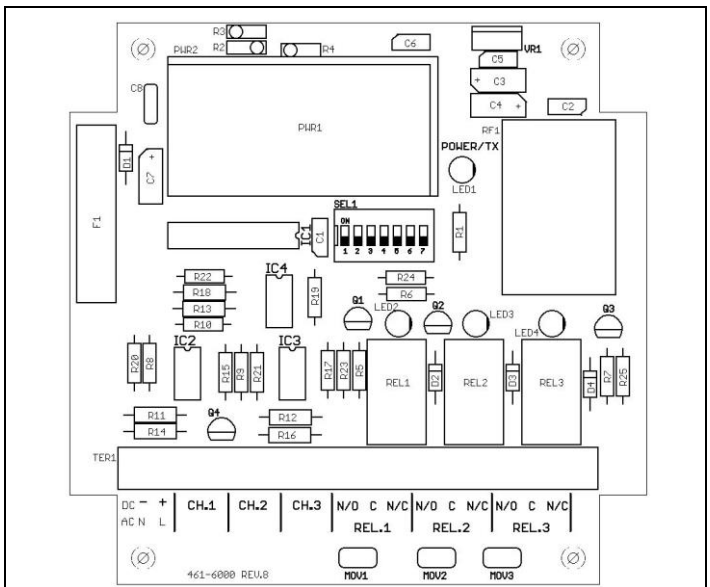
1. Mount the AIR-EAGLE XLT PLUS TRANSCEIVER in a convenient location.
2. Install transmit control and relay wiring to terminal strip.
3. Attach rubber duck antenna or coax from external antenna to connector on side of enclosure.
4. Connect supplied power input cable to your external power source.

### PC BOARD SET-UP INFORMATION

TERMINAL STRIP WIRING (TER1)	
Terminal 1	Negative (-) 9-36VDC INPUT
Terminal 2	Positive (+) 9-36VDC INPUT
Terminal 3	CH1 Dry Contact Input (Common)
Terminal 4	CH1 Dry Contact Input
Terminal 5	CH2 Dry Contact Input (Common)
Terminal 6	CH2 Dry Contact Input
Terminal 7	CH3 Dry Contact Input (Common)
Terminal 8	CH3 Dry Contact Input
Terminal 9	CH1 Relay N/O
Terminal 10	CH1 Relay C
Terminal 11	CH1 Relay N/C
Terminal 12	CH2 Relay N/O
Terminal 13	CH2 Relay C
Terminal 14	CH2 Relay N/C
Terminal 15	CH3 Relay N/O
Terminal 16	CH3 Relay C
Terminal 17	CH3 Relay N/C
Terminal 18	Not Used



### CONTROLS & INDICATORS



POWER/TX LED1	Dual color LED. Illuminates red while receiver is booting up; changes to green when boot-up is successful and unit is ready to operate. <b>If this LED fails to turn green, power unit off for 15-20 seconds, then reapply power.</b>
CH1 – CH3 Dry Contact Inputs	Transmit individual RF codes to the remote transceiver
LED2	Illuminates green while relay 1 is energized
LED3	Illuminates green while relay 2 is energized
LED4	Illuminates green while relay 3 is energized
REL1, REL2, REL3	Three SPDT output control relays
RF1	RF Module that transmits/receives data

# AIR-EAGLE® XLT PLUS

High Power 900MHz RF Transceiver  
THREE CONTACT INPUT / OUTPUT

**MODEL 461-6000-DC**

## RELAY OPERATION

TX Signal Received	Relay Function
Input 1 Closed	Relay 1 energizes, maintained momentary
Input 2 Closed	Relay 2 energizes, maintained momentary
Input 3 Closed	Relay 3 energizes, maintained momentary

## FREQUENCY & OPTIONS SET-UP

This unit is shipped from the factory with SEL1 switches in the open positions. The safety off-delay on all relays is 5 seconds and the unit is operating on frequency #1. If you wish to change the default setting, follow the instructions below:

- 1) Remove power from unit and remove top cover.
- 2) Select desired frequency, safety off-delay time and relay mode. using table below.
- 3) Reattach cover and apply power. Programming is now complete.

### FREQUENCY SELECTION

	Network Frequency	SW1	SW2	SW3
SEL 1 (SW1, 2 & 3):	#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

### SAFETY OFF-DELAY SELECTION

	Off-Delay	SW4	SW5
SEL 1 (SW4 & 5):	5 Seconds (default)	OPEN	OPEN
	30 Seconds	CLOSED	OPEN
	1 Minute	OPEN	CLOSED
	1 ½ Minutes	CLOSED	CLOSED

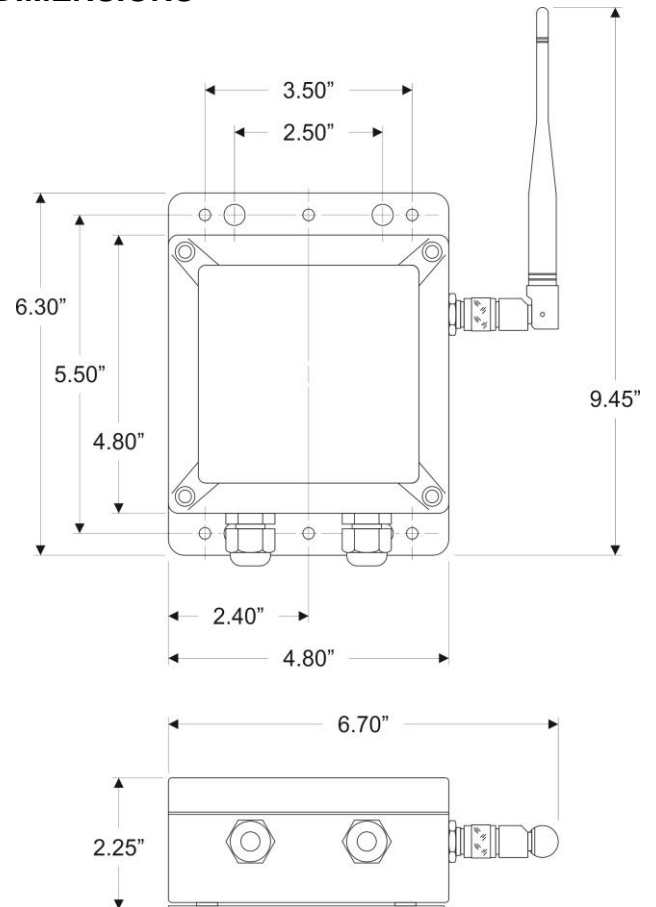
### RELAY MODE

SEL1 (SW6)	OPEN	CLOSED
	Momentary	Toggle Latching
SEL1 (SW7)	Not used on this model	

## SPECIFICATIONS

Power Supply	9-36 VDC, 5 W
Fuse Protected	2 amp
Frequency	900MHz Spread Spectrum
RF Networks	Eight Independent Network Frequencies
RF Output Power	1W
Transceiver Range	Up to 1 Mile with Rubber Duck Antenna / Up to 10 Miles with External Antenna
<i>Note: Max 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>	
Transmitter Data	Dry Contact Input
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC per channel
Enclosure	Polycarbonate, IP66 (NEMA 4)
Operating Temp	-40° F - +185° F

## DIMENSIONS



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THREE CONTACT INPUT / OUTPUT

**MODEL 461-6000-DC**

## ACCESSORIES

Standard Antenna (Included):	
900MHz TNC "Rubber Duck" Antenna	49-1103
Mobile/Base 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 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
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 of 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: 07/22/2021 / PRODUCT REV. 7



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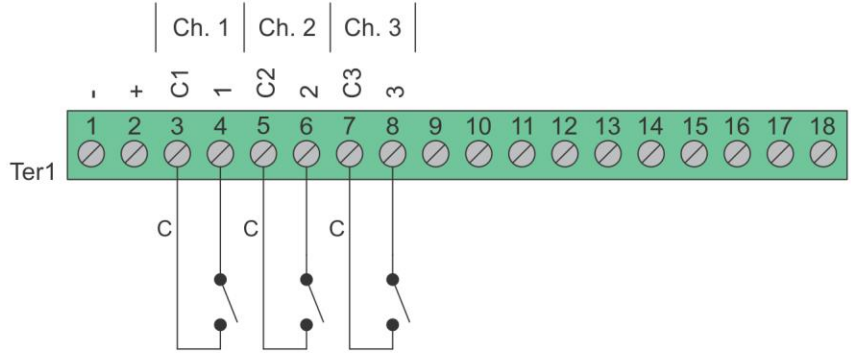


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# DRY CONTACT INPUT WIRING 3-Input Transmitter

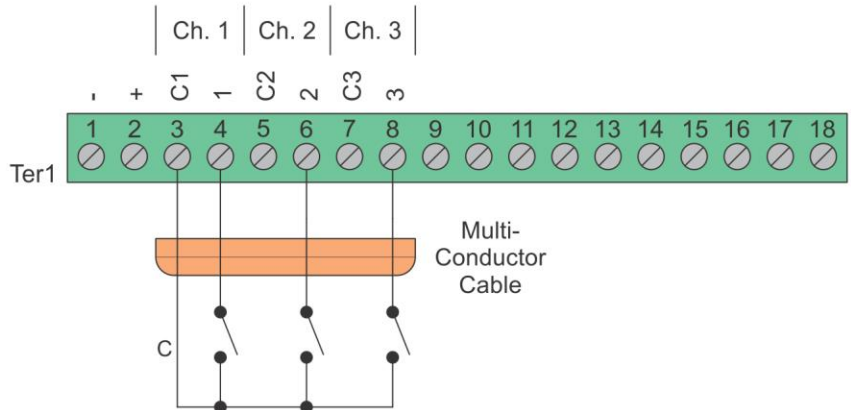
## Standard wiring of a dry contact input transmitter

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.



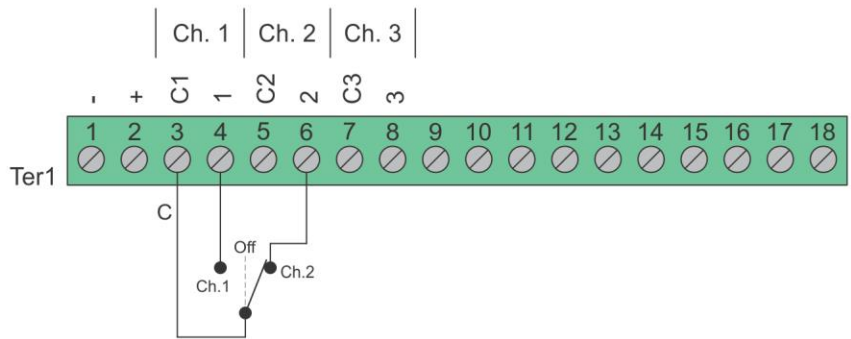
## Standard Wiring for Common Ground Applications

Because each channel shares a common (C) terminal, inputs can be wired as shown to allow for fewer conductors to be run to the transmitter.



## SPDT Switches

The common (C) terminal of the switch only needs to be connected to one of the channels ground terminal. In this configuration one channel would be transmitting all the time. A switch with a center "off" position would allow transmitting to stop.



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

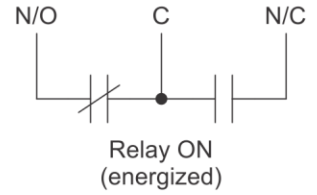
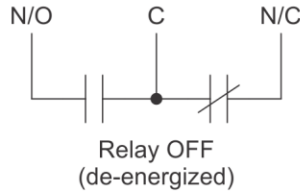


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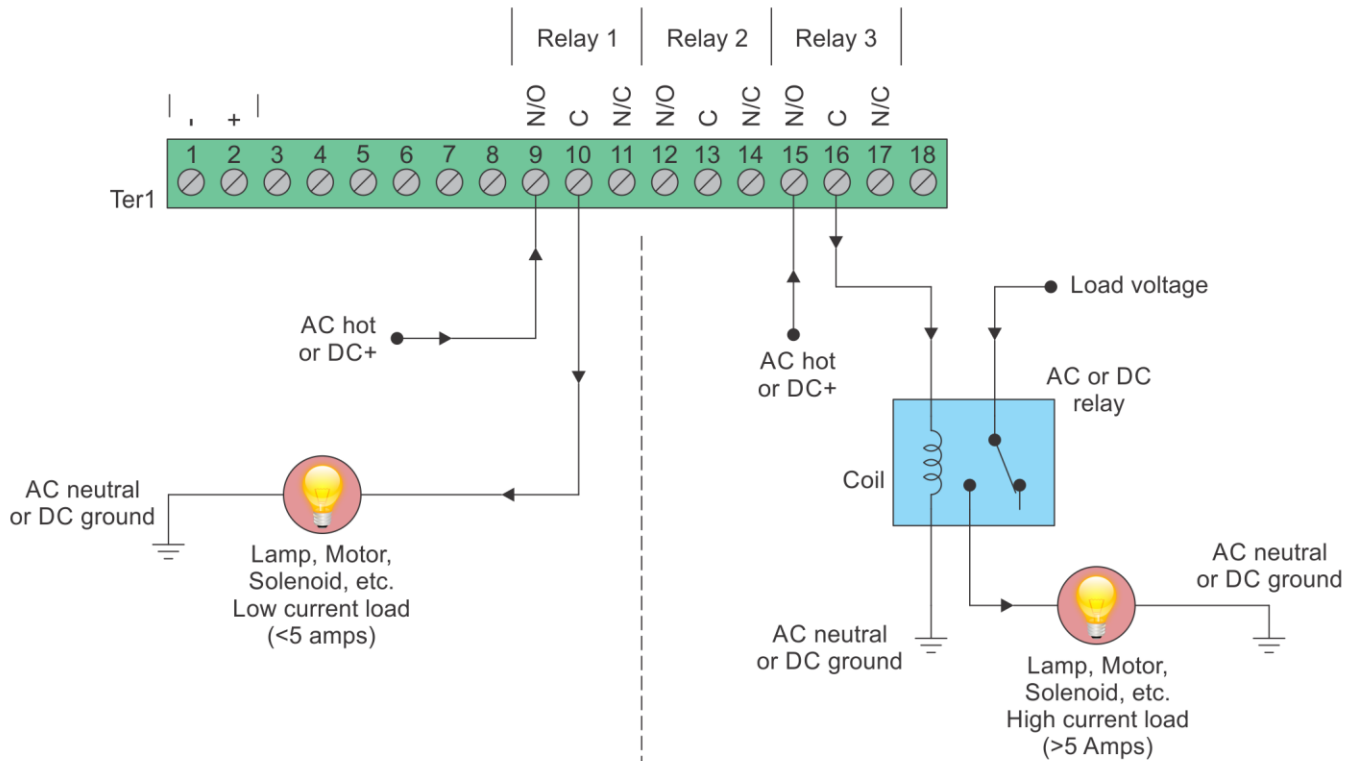
# RELAY OUTPUT WIRING

## 3-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.