



105 Bonnie Drive
Butler, PA 16002
724-283-4681
724-283-5939 (fax)
www.bwieagle.com

PRODUCT INFORMATION BULLETIN

AIR-EAGLE® SR PLUS 2.4 GHz RF Transceiver MODEL 36-6000-DC

DESCRIPTION

The AIR-EAGLE SR PLUS TRX is an R.F. transceiver capable of transmitting and receiving commands from up to 600 feet away. This model comes equipped with three dry contact inputs and two 5amp relay outputs. When combined with another transceiver this allows the user to transmit information out and receive a confirming signal back that the operation was performed. This unit has eight user-selectable network frequencies to allow multiple systems to operate simultaneously in the same area without interference.

INSTALLATION

DISCONNECT Power from all equipment before installation.

1. Mount the control unit in a convenient location.
2. Install control wiring to terminal strip.
3. Make desired relay, channel code and frequency selections using instructions on page 2.
4. Attach antenna to TNC connector located on the right side of the enclosure.
5. Connect supplied power input cable to your external source.

PC BOARD SET-UP INFORMATION

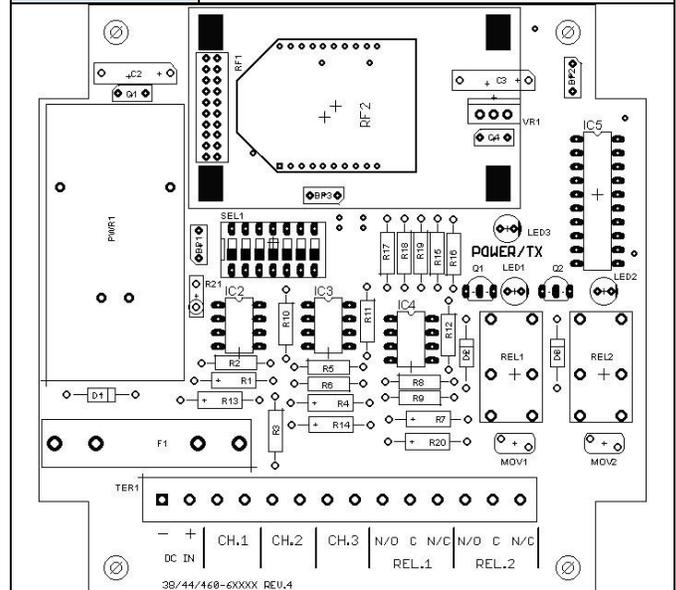
Make the following connections on the PC Board Terminal Strip (TER1)

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



CONTROLS & INDICATORS

POWER/TX LED	Illuminates Green when power is applied, changes to Red when transmitting.
LED1	Green LED illuminates continuously while relay #1 is energized
LED2	Green LED illuminates continuously while relay #2 is energized
CH1 – CH3 Dry Contact Inputs	Transmit individual RF codes to the remote transceiver
REL1 & REL2	Two SPDT output control relays
RF1	RF Module that transmits/receives data for corresponding unit



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2.4 GHz RF Transceiver

MODEL 36-6000-DC

RELAY, CHANNEL CODES & FREQUENCY SETTINGS

The unit is shipped from the factory with SEL1 switches in the open positions. The relays will operate as maintained momentary, the unit is transmitting & receiving channel 1 & 2 commands, and it is operating on frequency 1. 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, channel codes to be sent & received and network frequency using table below.
- 4) Reattach cover and apply power.
- 5) Programming is now complete.

RELAY CONFIGURATION

SEL1 SWITCH NUMBER	OPEN	CLOSED
SW1	Relay #1 momentary <i>(default)</i>	Relay #1 toggle/latch
SW2	Relay #2 momentary <i>(default)</i>	Relay #2 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.

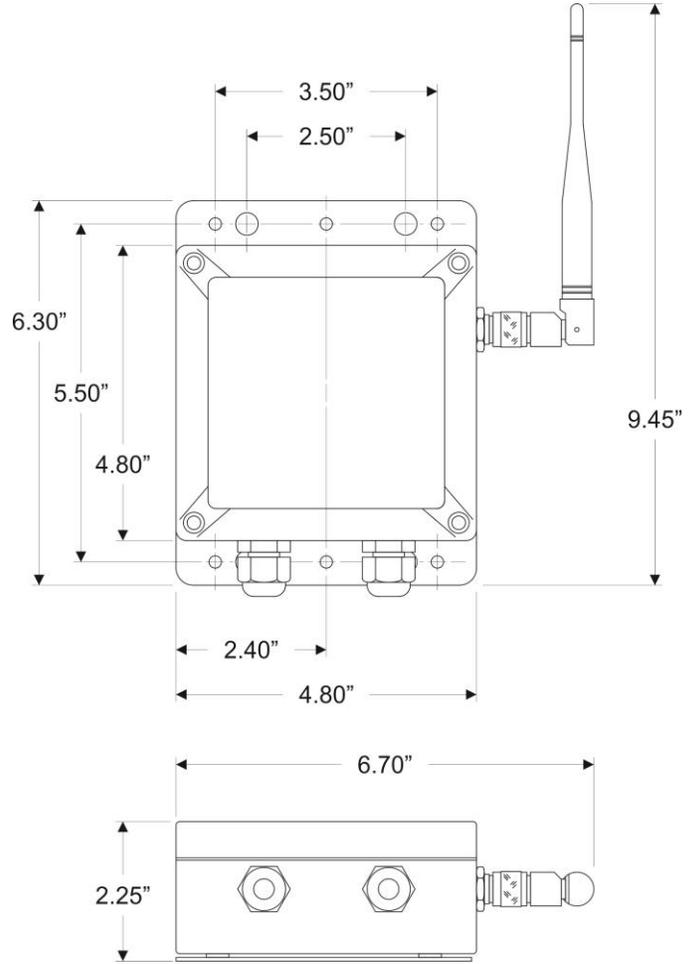
CHANNEL CODE SET-UP

SEL1 (SW3-4)	Channel Codes To Be Transmitted & Received	SW3	SW4
	1 & 2 <i>(default)</i>	OPEN	OPEN
	3 & 4	CLOSED	OPEN
	5 & 6	OPEN	CLOSED
	7 & 8	CLOSED	CLOSED

FREQUENCY SET-UP

SEL1 (SW5-7)	Network Frequency	SW5	SW6	SW7
	1 <i>(default)</i>	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

DIMENSIONS



APPROVALS

United States (FCC)	MCQ-XBEE3
Canada (IC)	1846A-XBEE3
Europe (CE)	ETSI

SPECIFICATIONS

Power Input	9 – 36 VDC @ 10 Watts
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC
Fuse Protected	1 amp
Transceiver Frequency	2.4 GHz Spread Spectrum
RF Output Power	60 mW
Transceiver Range	Up to 600 feet

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.

RF Networks	Eight Independent Frequencies
Antenna Connection	TNC Bulkhead
Operating Temperature	-40° F to +185° F
Enclosure	Polycarbonate, IP66 (NEMA 4)
Weight	Approx 2 lbs.

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ACCESSORIES

Standard Antenna (Included):	
2.4GHz TNC "Rubber Duck" Antenna	49-1201
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	
2.4GHz Thru-Hole Mount Mobile Antenna	49-2201
2.4GHz Magnet Mount Mobile Antenna	49-2202
2.4GHz Omni Directional Base Antenna	49-3201
2.4GHz Yagi Directional Base Antenna	49-3202
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.

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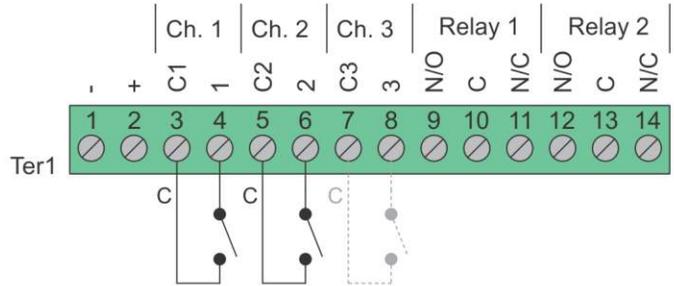
TRANSCEIVER WIRING

3-Input / 2-Output

Dry Contact Input Wiring - Standard

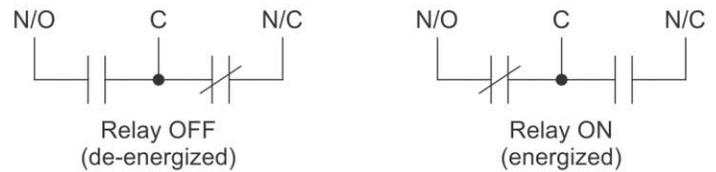
Standard wiring of a dry contact input transmitter

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.

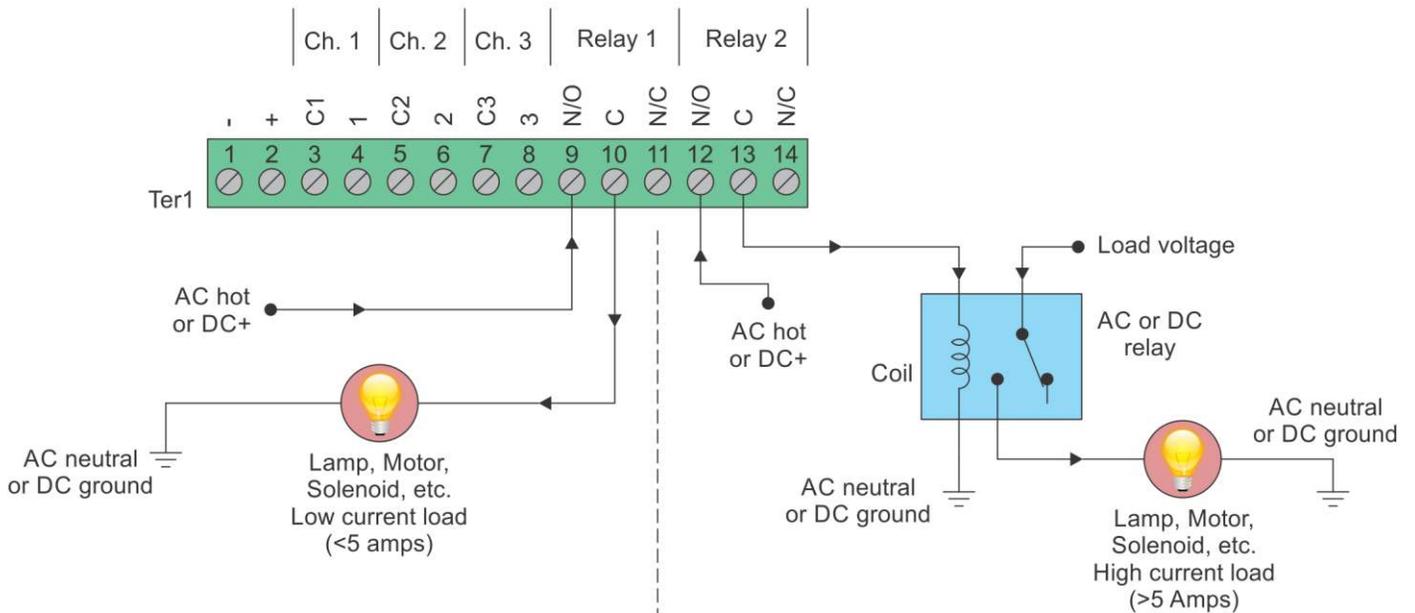


Relay Output Wiring

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.