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# PRODUCT INFORMATION BULLETIN

## AIR-EAGLE® SR 2.4 GHz RF Receiver MODEL 38-5000-AC

### DESCRIPTION

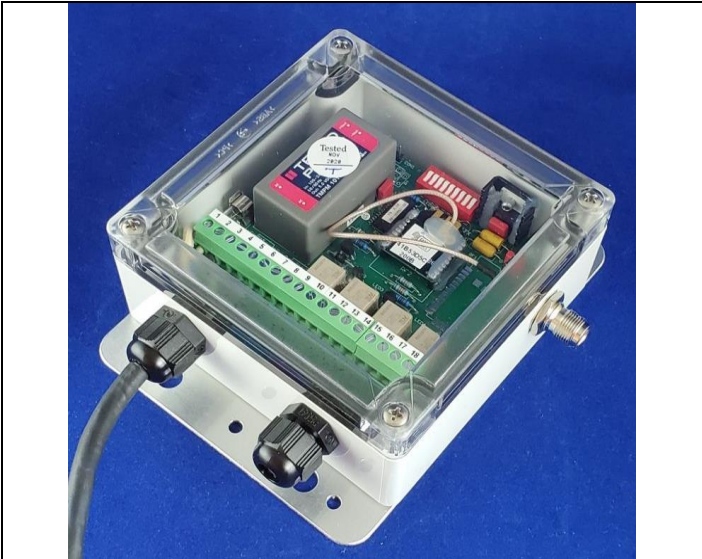
The AIR-EAGLE SR is an RF system designed for short to medium range wireless remote control of electrical apparatus in a variety of industrial applications. Systems can consist of any number of receivers and handheld or contact input transmitters working together. This receiver is equipped with 4 independent 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. Sixteen user-selectable digital addresses and eight user selectable frequencies allow multiple systems to be used in the same area. Capable of receiving remote signals transmitted from up to 600 feet away, the Air-Eagle SR Receiver utilizes spread-spectrum technology and provides the utmost in security and reliability.

### INSTALLATION

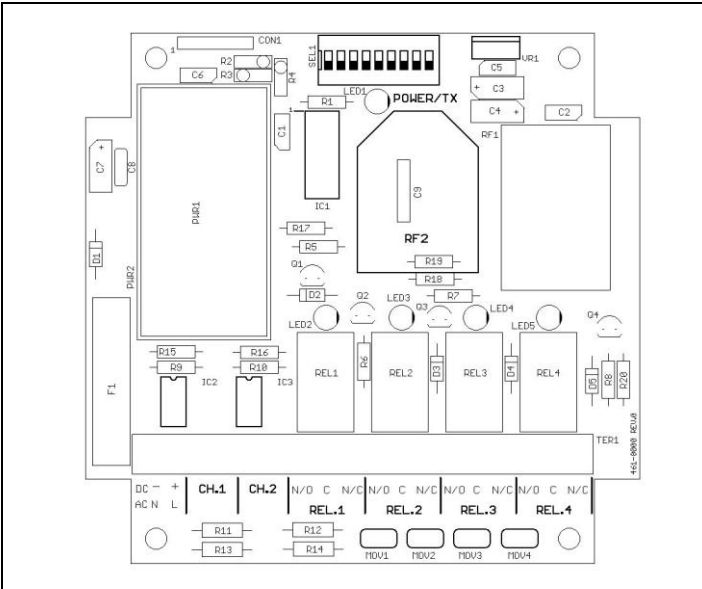
1. Mount the AIR-EAGLE SR RECEIVER in a convenient location.
2. Install relay control wiring to the terminal strip.
3. Attach rubber duck antenna or coax from external antenna to connector on side of enclosure.
4. Connect supplied power input cable to your external power source.

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

TERMINAL STRIP WIRING (TER1)		
Terminal 1	100-250 VAC Power Input	
Terminal 2	100-250 VAC Power Input	
Terminal 3	CH1 Dry Contact Input (Common)	Not used on this model
Terminal 4	CH1 Dry Contact Input	
Terminal 5	CH2 Dry Contact Input (Common)	
Terminal 6	CH2 Dry Contact Input	
Terminal 7	N/O Relay 1	
Terminal 8	C Relay 1	
Terminal 9	N/C Relay 1	
Terminal 10	N/O Relay 2	
Terminal 11	C Relay 2	
Terminal 12	N/C Relay 2	
Terminal 13	N/O Relay 3	
Terminal 14	C Relay 3	
Terminal 15	N/C Relay 3	
Terminal 16	N/O Relay 4	
Terminal 17	C Relay 4	
Terminal 18	N/C Relay 4	



### 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>
LED2	Illuminates green while relay 1 is energized
LED3	Illuminates green while relay 2 is energized
LED4	Illuminates green while relay 3 is energized
LED5	Illuminates green while relay 4 is energized
REL1 – REL4	Four SPDT output control relays
RF1 or 2	RF module that transmits/receives data
SEL1	Dip switches for changing address & frequency

# AIR-EAGLE® SR

2.4 GHz RF Receiver

**MODEL 38-5000-AC**

## RELAY OPERATION

Relays energize based on commands received from the transmitter. See table below for relay mode configuration for this receiver:

TX BUTTON OR INPUT ACTIVATED	RELAY OPERATION – MODE
1	Relay #1 Energizes, Maintained Momentary
2	Relay #2 Energizes, Maintained Momentary
3	Relay #3 Energizes, Maintained Momentary
4	Relay #4 Energizes, Maintained Momentary

**Maintained Momentary** – Relay mimics button or input – when depressed or closed, relay will be energized; when released, relay de-energizes

## DIGITAL ADDRESS & FREQUENCY SET-UP

The unit is shipped from the factory with SEL1 switches set so that unit is receiving commands on Digital Address "1" / 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 digital address and/or network frequency using table below.
- 4) Reattach cover and apply power.
- 5) Programming is now complete.

### DIGITAL ADDRESS SET-UP

SEL1 (SW1-4)	Digital Address	SW1	SW2	SW3	SW4
	1 (default)	OPEN	OPEN	OPEN	OPEN
2	CLOSED	OPEN	OPEN	OPEN	OPEN
3	OPEN	CLOSED	OPEN	OPEN	OPEN
4	CLOSED	CLOSED	OPEN	OPEN	OPEN
5	OPEN	OPEN	CLOSED	OPEN	OPEN
6	CLOSED	OPEN	CLOSED	OPEN	OPEN
7	OPEN	CLOSED	CLOSED	OPEN	OPEN
8	CLOSED	CLOSED	CLOSED	OPEN	OPEN
9	OPEN	OPEN	OPEN	CLOSED	CLOSED
10	CLOSED	OPEN	OPEN	CLOSED	CLOSED
11	OPEN	CLOSED	OPEN	CLOSED	CLOSED
12	CLOSED	CLOSED	OPEN	CLOSED	CLOSED
13	OPEN	OPEN	CLOSED	CLOSED	CLOSED
14	CLOSED	OPEN	CLOSED	CLOSED	CLOSED
15	OPEN	CLOSED	CLOSED	CLOSED	CLOSED
16	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED

### FREQUENCY SET-UP

SEL1 (SW5-7)	Network Frequency	SW5	SW6	SW7
	1 (default)	OPEN	OPEN	OPEN
2	CLOSED	OPEN	OPEN	OPEN
3	OPEN	CLOSED	OPEN	OPEN
4	CLOSED	CLOSED	OPEN	OPEN
5	OPEN	OPEN	CLOSED	CLOSED
6	CLOSED	OPEN	CLOSED	CLOSED
7	OPEN	CLOSED	CLOSED	CLOSED
8	CLOSED	CLOSED	CLOSED	CLOSED

SW8 & SW9 Not used on this model

## SPECIFICATIONS

Power Supply	100-250 VAC, 5 W, 50/60 Hz
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC per channel
Fuse Protected	2 amp
Receiver Frequency	2.4 GHz Spread Spectrum
Receiver Range	Up to 600 feet
<i>Note: 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>	
Digital Addresses	Sixteen independent digital addresses
Network Frequencies	Eight independent network frequencies
Operating Temperature	-40° F to +185° F
Enclosure	Polycarbonate, IP66 (NEMA 4)
Weight	Approx 2.11 lbs.

## APPROVALS

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

## 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

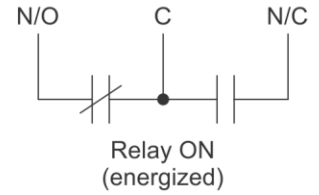
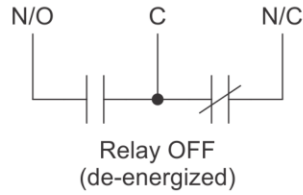
BWI Eagle Inc. warrants the Air-Eagle Remote Control System, if properly used and installed, will be free from defects in material and workmanship for a period of 1 year after date of purchase. Said warranty to include the repair or replacement of defective equipment. This warranty does not cover damage 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.



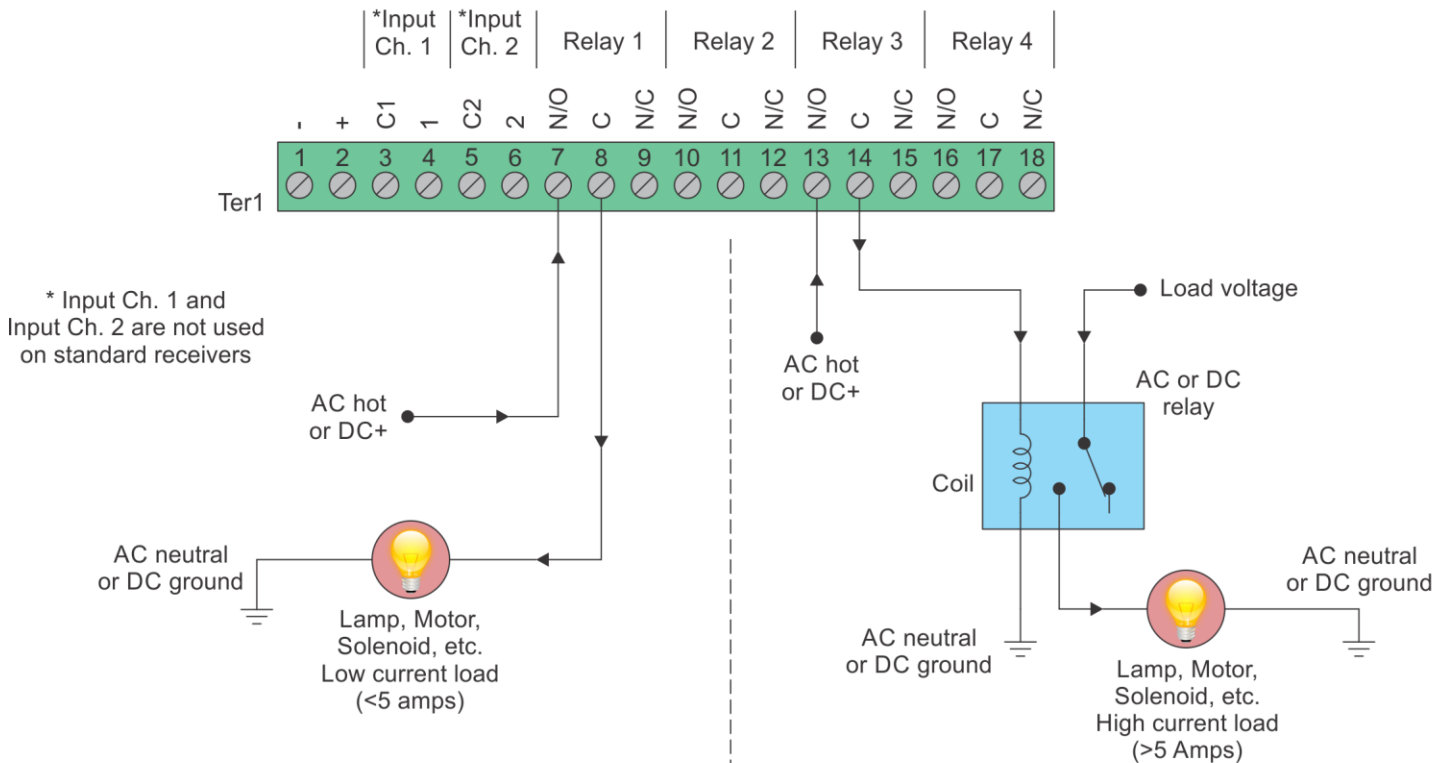
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# RELAY OUTPUT WIRING 4-Relay Receiver

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.