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# PRODUCT INFORMATION BULLETIN

## AIR-EAGLE® SR 2.4 GHz RF Receiver MODEL 38P-2-ESTOP-DC

### 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. This receiver has been specifically designed for E-Stop applications. It links with an E-stop transmitter for failsafe operation. Dip switches allow the user to select link-loss shutdown times, relay operation and whether power must be recycled to reset the system. The relays are capable of switching up to 5 amps @ 120VAC or 30VDC and can be directly interfaced with the customer's equipment or P.L.C. This receiver is capable of receiving remote signals transmitted from up to 600 feet away.

### INSTALLATION

DISCONNECT DC Power from all equipment before installation.

1. Mount the AIR-EAGLE SR RECEIVER in a convenient location.
2. Select options & frequency (See OPTIONS & FREQUENCY SET-UP)
3. Install relay wiring to terminal strip.
4. Install antenna onto connector located on the right side on the enclosure.
5. Connect supplied power input cable to your external power source.

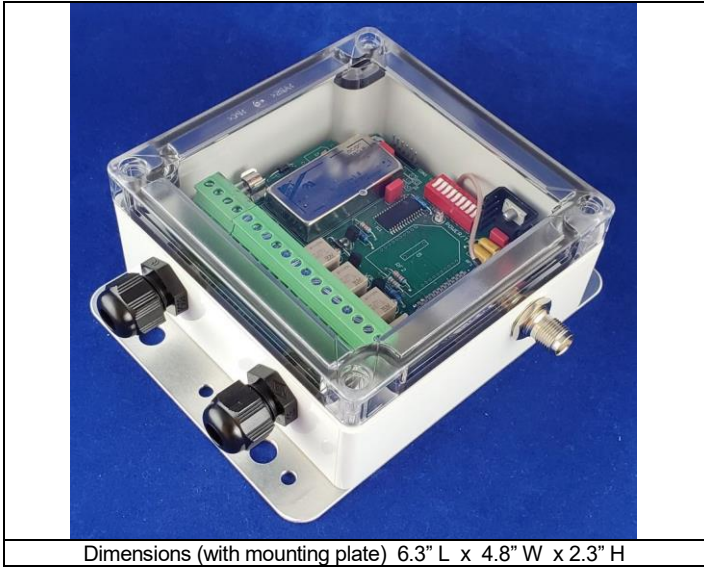
### TERMINAL STRIP WIRING

1	N/O Relay #1	7	N/O Relay #3	13	(-) 9-36VDC INPUT
2	C Relay #1	8	C Relay #3	14	(+) 9-36VDC INPUT
3	N/C Relay #1	9	N/C Relay #3		
4	N/O Relay #2	10	N/O Relay #4		
5	C Relay #2	11	C Relay #4		
6	N/C Relay #2	12	N/C Relay #4		

### GENERAL OPERATION

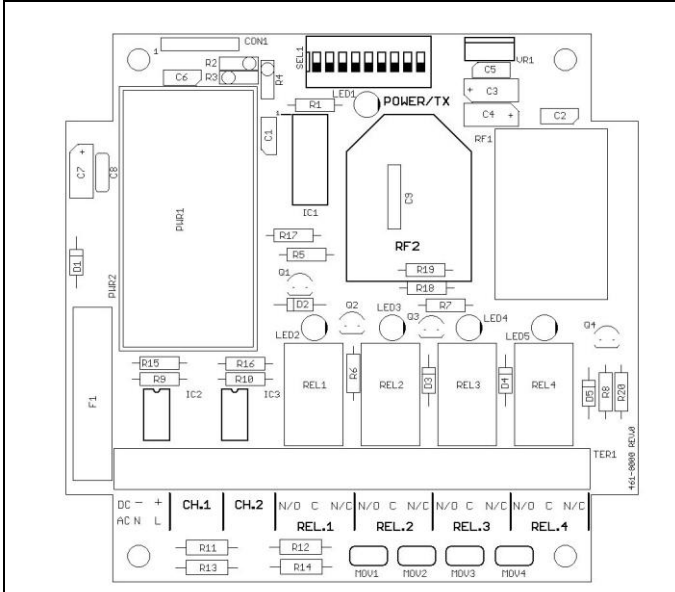
*Prior to operation the user selects various options that control the link-loss shutdown, relay activation and system reset. (See OPTIONS & FREQUENCY SET-UP).*

When power is applied to the receiver, all relays will be in their de-energized state. When power is applied to the E-stop transmitter, it immediately begins sending a beacon signal that causes all relays in the receiver to energize, indicating the communications link. Upon an E-stop command, the selected relays immediately de-energize. Upon specified link-loss time, the selected relays de-energize. The system will then need to be manually reset or will automatically come back online as designated by the system operation option selected.



Dimensions (with mounting plate) 6.3" L x 4.8" W x 2.3" H

### CONTROLS AND 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	RF Module that transmits/receives data

# AIR-EAGLE® SR

2.4 GHz RF Receiver

**MODEL 38P-2-ESTOP-DC**

## OPTIONS & FREQUENCY SET-UP

The unit is shipped from the factory with all SEL1 switches in the open positions. By default, the link-loss shutdown time is set to .5 seconds; power must be recycled to reset the system following an E-stop event; all relays respond to either E-stop command; and the unit is operating on Frequency #1. If you wish to select different options and/or change the frequency, follow the instructions on the table below.

- 1) Remove power from unit
- 2) Remove top cover.
- 3) Select desired options and/or frequency using table below.
- 4) Reattach cover and apply power.
- 5) Programming is now complete.

### LINK-LOSS SHUTDOWN

SEL1 (SW1-2)	Link-Loss Shutdown Time in Seconds	SW1	SW2
	0.5 (default)	OPEN	OPEN
	0.25	CLOSED	OPEN
	1	OPEN	CLOSED
	1.5	CLOSED	CLOSED

### SYSTEM RESET OPTIONS

SEL1 (SW3)	System Reset Requirement	SW3
	Power must be recycled to receiver following any E-stop event (default)	OPEN
	Relays revert to energized state upon release of E-stop button and resumption of communication link	CLOSED

### RELAY RESPONSE OPTIONS

SEL1 (SW4)	Relay Response to E-Stop Event	SW4
	All four relays de-energize upon E-stop command <u>OR</u> link-loss (default)	OPEN
	Relays 1 & 2 de-energize upon E-stop command; Relays 3 & 4 de-energize upon link loss	CLOSED

### 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
	8	CLOSED	CLOSED	CLOSED

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## SPECIFICATIONS

DC Input	9 – 36 VDC @ 10 Watts
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC
Fuse Protected	1 amp
Receiver Frequency	2.4 GHz Spread Spectrum
Receiver Range	Up to 600 feet
<small>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.</small>	
Receiver Frequencies	Eight independent network frequencies
Operating Temperature	-40° F to +185° F
Enclosure	Polycarbonate IP66 (NEMA 4)
Weight	Approx 2 lbs.

## APPROVALS

United States (FCC)	MCQ-XBEE3
Canada (IC)	1846A-XBEE3
Europe (CE)	ETSI
Australia	RCM
Brazil	ANATEL 06329-18-01209

## 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.

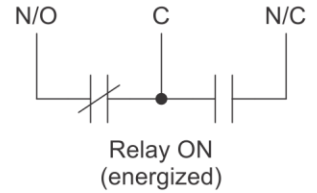
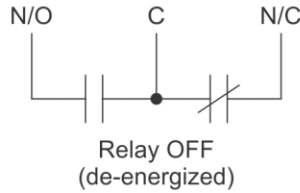


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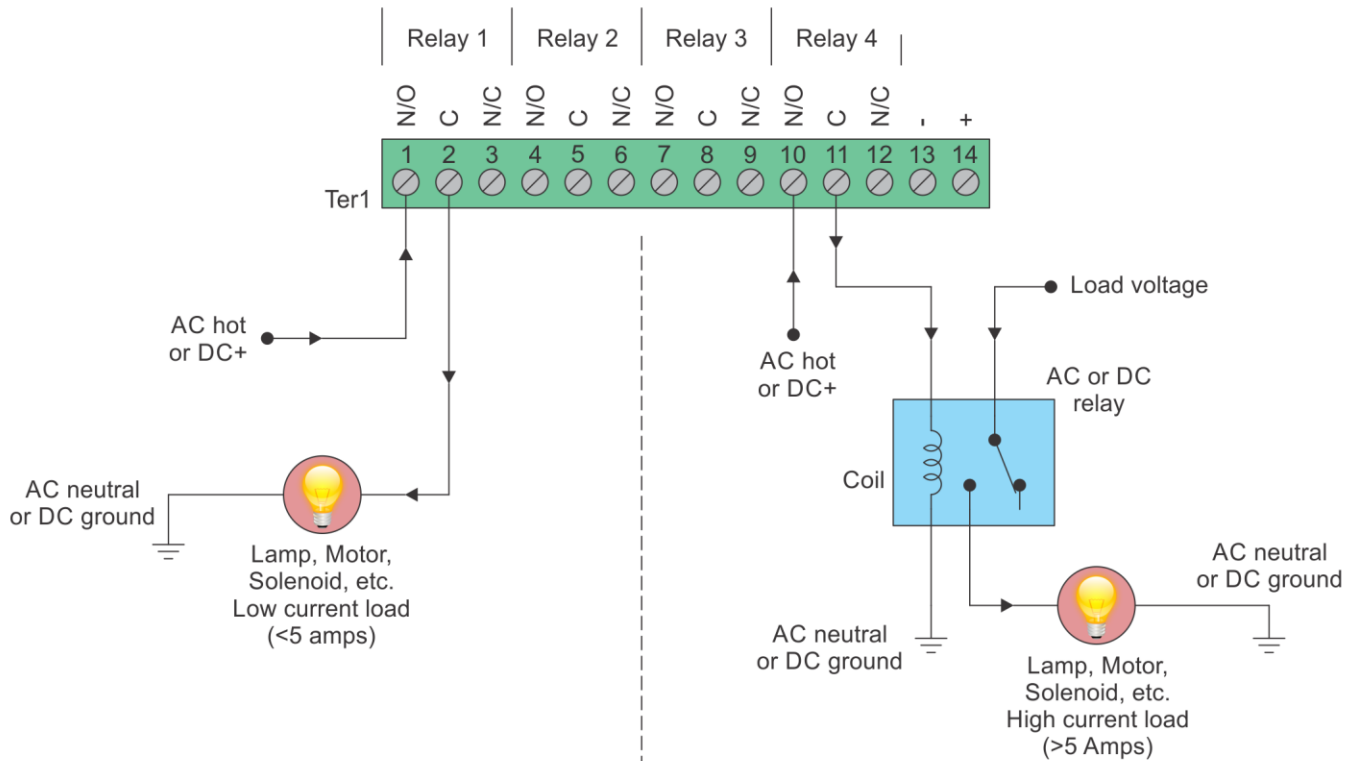
# RELAY OUTPUT WIRING

## 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.