



105 Bonnie Drive
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PRODUCT INFORMATION BULLETIN

AIR-EAGLE® SR 2.4 GHz RF Receiver MODEL 38-2000-R1NC

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 are capable of switching 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. Eight user selectable frequencies allow multiple systems to be used in the same area. Capable of receiving remote signals transmitted from up to 100 feet away (with the SR transmitter) or up to 600 feet away (with the SR PLUS transmitter), the Air-Eagle SR Receiver utilizes spread-spectrum technology and provides the utmost security and reliability even in the noisiest RF environments.

APPROVALS

| | |
|---------------------|---------------|
| United States (FCC) | OUR-XBEEPRO |
| Canada (IC) | 4214A-XBEEPRO |
| Europe (CE) | ETSI |

INSTALLATION

DISCONNECT AC Power from all equipment before installation.

1. Mount the AIR-EAGLE SR RECEIVER in a convenient location.
2. Install antenna to connector located on the right side on the enclosure.
3. Connect AC power to the proper terminals in your control circuit.

TERMINAL STRIP WIRING

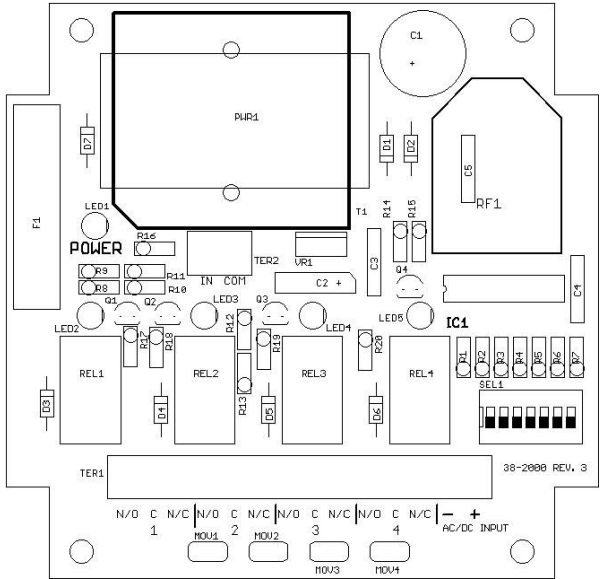
| | | | | | |
|---|--------------|----|--------------|----|---------------------|
| 1 | N/O Relay #1 | 7 | N/O Relay #3 | 13 | 120 VAC - (Neutral) |
| 2 | C Relay #1 | 8 | C Relay #3 | 14 | 120 VAC - (Hot) |
| 3 | N/C Relay #1 | 9 | N/C Relay #3 | | |
| 4 | N/O Relay #2 | 10 | N/O Relay #4 | | |
| 5 | C Relay #2 | 11 | C Relay #4 | | |
| 6 | N/C Relay #2 | 12 | N/C Relay #4 | | |

Relay #1 contacts are shown in their de-energized state. When power is applied to the unit, relay #1 will energize. The relay will then de-energize when a signal is received from the transmitter.



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

CONTROLS AND INDICATORS



| | |
|----------------|--|
| LED1 | Illuminated when power is applied to receiver |
| LED2 | Illuminated when relay #1 is energized |
| LED3 | Illuminated when relay #2 is energized |
| LED4 | Illuminated when relay #3 is energized |
| LED5 | Illuminated when relay #4 is energized |
| RF1 | RF module that receives data from the remote transmitter |
| REL1 thru REL4 | Four SPDT output control relays |
| SEL1 | Seven dip switches for selecting relay options and operating frequency |

AIR-EAGLE® SR

2.4 GHz RF Receiver

MODEL 38-2000-R1NC

RELAY OPERATION

Relay #1 in the model 38-2000-R1NC has been modified to have normally closed relay operation – Relay #1 will energize when power is applied to the receiver, and will de-energize when a signal is received from the transmitter.

RELAY & FREQUENCY SET-UP

The unit is shipped from the factory with SEL1 switches in the open positions. All four relays will operate as maintained momentary and unit is receiving commands on frequency one. 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 and/or 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 (default) | Relay #1 toggle/latch |
| SW2 | Relay #2 momentary (default) | Relay #2 toggle/latch |
| SW3 | Relay #3 momentary (default) | Relay #3 toggle/latch |
| SW4 | Relay #4 momentary (default) | Relay #4 toggle/latch |

FREQUENCY SET-UP

| | Network Frequency | SW5 | SW6 | SW7 |
|-----------------|-------------------|--------|--------|--------|
| SEL1 (SW5-7) | 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 |

DOCUMENT DATE: 03/01/2019 / PRODUCT REV. 9



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SPECIFICATIONS

| | |
|--|--|
| AC Input | 120 VAC, 5 W, 50/60 Hz |
| Relay Contacts | SPDT 5 amp @ 120VAC or 30VDC per channel |
| Fuse Protected | 1 amp |
| Transceiver Frequency | 2.4 GHz Spread Spectrum |
| Receiver Range – Dependant upon transmitter – see below: | |
| Using 38 Series TX | Approximately 100 feet |
| Using 36 Series TX | Approximately 600 feet |
| Receiver Channels | Eight independent network frequencies |
| Operating Temperature | -40° F to +185° F |
| Enclosure | Polycarbonate NEMA 4, IP66 |
| Weight | Approx 2 lbs. |

REPLACEMENT PARTS & ACCESSORIES

| | |
|---|--------------------------------|
| PC Board (Main) | 38-2002-R1NC |
| Standard Antenna (Included): | |
| 2.4GHz TNC Portable Antenna (For distances up to 1200 feet*) | 49-1201 |
| Optional Antennas and Accessories – Used to increase 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 Magnetic Mount Mobile Antenna | 49-2202 |
| 2.4GHz 3dB Omni Directional Antenna | 49-3201 |
| 2.4GHz 13dB Yagi Antenna | 49-3202 |
| Flex Coax Cable w/Connectors – Connects external antenna(s) to base unit(s). | 49-4000-XX (XX = # of Feet) |
| Inline Lightning Arrestor | 49-5002 |
| 2 Ft. Bulkhead Assembly (Used when mounting unit inside another enclosure) | 49-5004 |
| * = Line of Sight | |

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 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.

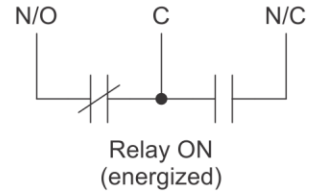
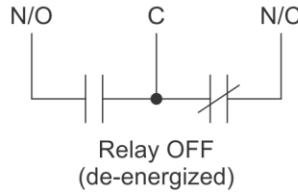


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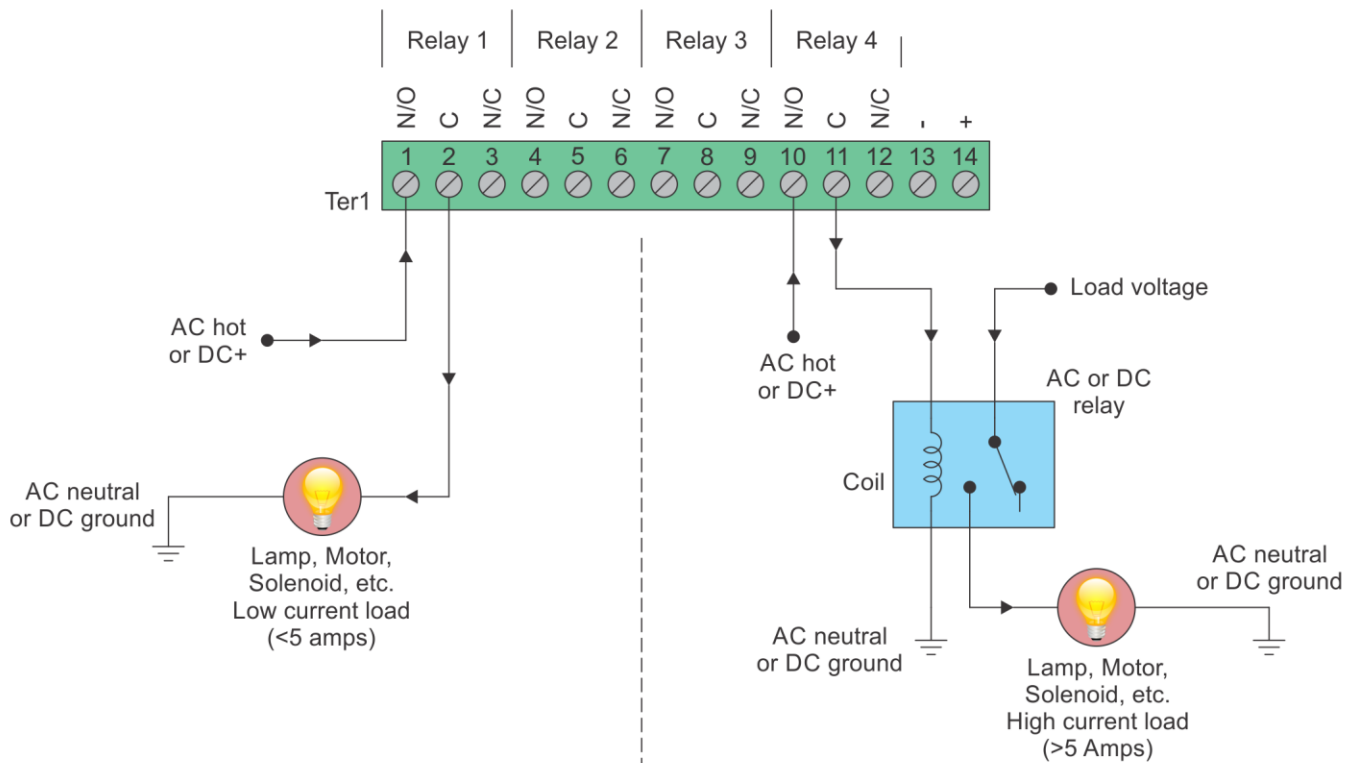
RELAY OUTPUT WIRING

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.