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# PRODUCT INFORMATION BULLETIN

## AIR-EAGLE® SR 2.4GHz RF Receiver MODEL 38-21600-AC

### DESCRIPTION

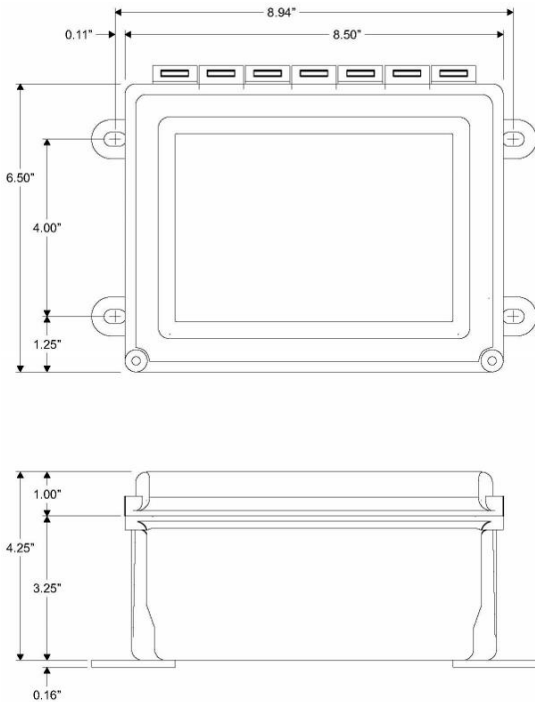
The AIR-EAGLE SR is an RF system designed for short to medium range wireless remote control of electrical apparatus in a variety of industrial applications. Systems can consist of any number of receivers and handheld or contact input transmitters working together. This receiver is equipped with 16 independent 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. 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 security and reliability even in the noisiest RF environments.

### INSTALLATION

DISCONNECT AC Power from all equipment before installation.

1. Mount the AIR-EAGLE SR RECEIVER in a convenient location.
2. Install relay wiring to terminal strip.
3. Install antenna onto antenna connector located on the right side on the enclosure.
4. Connect supplied power input cable to your external power source.

### DIMENSIONS



### TERMINAL STRIP WIRING

BOTTOM BOARD					
1	N/O Relay #1	10	N/O Relay #4	19	N/O Relay #7
2	C Relay #1	11	C Relay #4	20	C Relay #7
3	N/C Relay #1	12	N/C Relay #4	21	N/C Relay #7
4	N/O Relay #2	13	N/O Relay #5	22	N/O Relay #8
5	C Relay #2	14	C Relay #5	23	C Relay #8
6	N/C Relay #2	15	N/C Relay #5	24	N/C Relay #8
7	N/O Relay #3	16	N/O Relay #6		
8	C Relay #3	17	C Relay #6		
9	N/C Relay #3	18	N/C Relay #6		
TOP BOARD					
1	N/O Relay #9	10	N/O Relay #12	19	N/O Relay #15
2	C Relay #9	11	C Relay #12	20	C Relay #15
3	N/C Relay #9	12	N/C Relay #12	21	N/C Relay #15
4	N/O Relay #10	13	N/O Relay #13	22	N/O Relay #16
5	C Relay #10	14	C Relay #13	23	C Relay #16
6	N/C Relay #10	15	N/C Relay #13	24	N/C Relay #16
7	N/O Relay #11	16	N/O Relay #14		
8	C Relay #11	17	C Relay #14		
9	N/C Relay #11	18	N/C Relay #14		
AC POWER INPUT					
Terminal #1			100-250 VAC		
Terminal #2			100-250 VAC		

# AIR-EAGLE® SR

## 2.4GHz RF Receiver

### MODEL 38-21600-AC

### APPROVALS

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

### GENERAL OPERATION

Relays #1 thru #16 energize or de-energize based on specific commands from a handheld or contact input transmitter.

BUTTON OR INPUT ACTIVATED	RELAY OPERATION
"1"	Relay #1 energizes, maintained momentary
"2"	Relay #2 energizes, maintained momentary
"3"	Relay #3 energizes, maintained momentary
"4"	Relay #4 energizes, maintained momentary
"5"	Relay #5 energizes, maintained momentary
"6"	Relay #6 energizes, maintained momentary
"7"	Relay #7 energizes, maintained momentary
"8"	Relay #8 energizes, maintained momentary
"9"	Relay #9 energizes, maintained momentary
"10"	Relay #10 energizes, maintained momentary
"11"	Relay #11 energizes, maintained momentary
"12"	Relay #12 energizes, maintained momentary
"13"	Relay #13 energizes, maintained momentary
"14"	Relay #14 energizes, maintained momentary
"15"	Relay #15 energizes, maintained momentary
"16"	Relay #16 energizes, maintained momentary

### SPECIFICATIONS

AC Input	100-250 VAC, 5 W, 50/60 Hz
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
<p><b>Note:</b> 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.</p>	
Receiver Channels	Eight independent network frequencies
Operating Temperature	-40° F to +185° F
Enclosure	Hinged fiberglass with window / NEMA 4, IP66
Weight	Approx 2 lbs.

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### RELAY & FREQUENCY SET-UP

This unit is shipped from the factory with SEL1 switches #1 and #2 in the open positions. All sixteen relays will operate in a maintained momentary manner, and unit is receiving commands on frequency one. If you wish to change these default settings, follow the instructions on the table below.

<ol style="list-style-type: none"> <li>1) Remove power from unit</li> <li>2) Remove top cover.</li> <li>3) Select desired relay operation and/or network frequency using table below.</li> <li>4) Reattach cover and apply power.</li> <li>5) Programming is now complete.</li> </ol>				
RELAY CONFIGURATION				
SEL1 SWITCH NUMBER	OPEN		CLOSED	
SW1	Relays #1 thru #8 maintained momentary (default)		Relays #1 thru #8 toggle/latch	
SW2	Relays #9 thru #16 maintained momentary (default)		Relays #9 thru #16 toggle/latch	
<p><b>Maintained Momentary</b> – Relay mimics button or input – when depressed or closed, relay will be energized; when released, relay de-energizes</p> <p><b>Toggle Latch</b> – Relay changes (and holds) its state each time the corresponding button or input is depressed or closed.</p>				
SW3	Vibrating Feedback OFF (default)		Vibrating Feedback ON	
SW4	Not used on this model			
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

### 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)

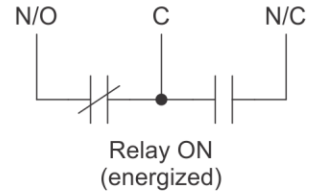
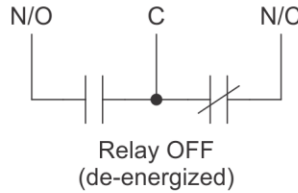


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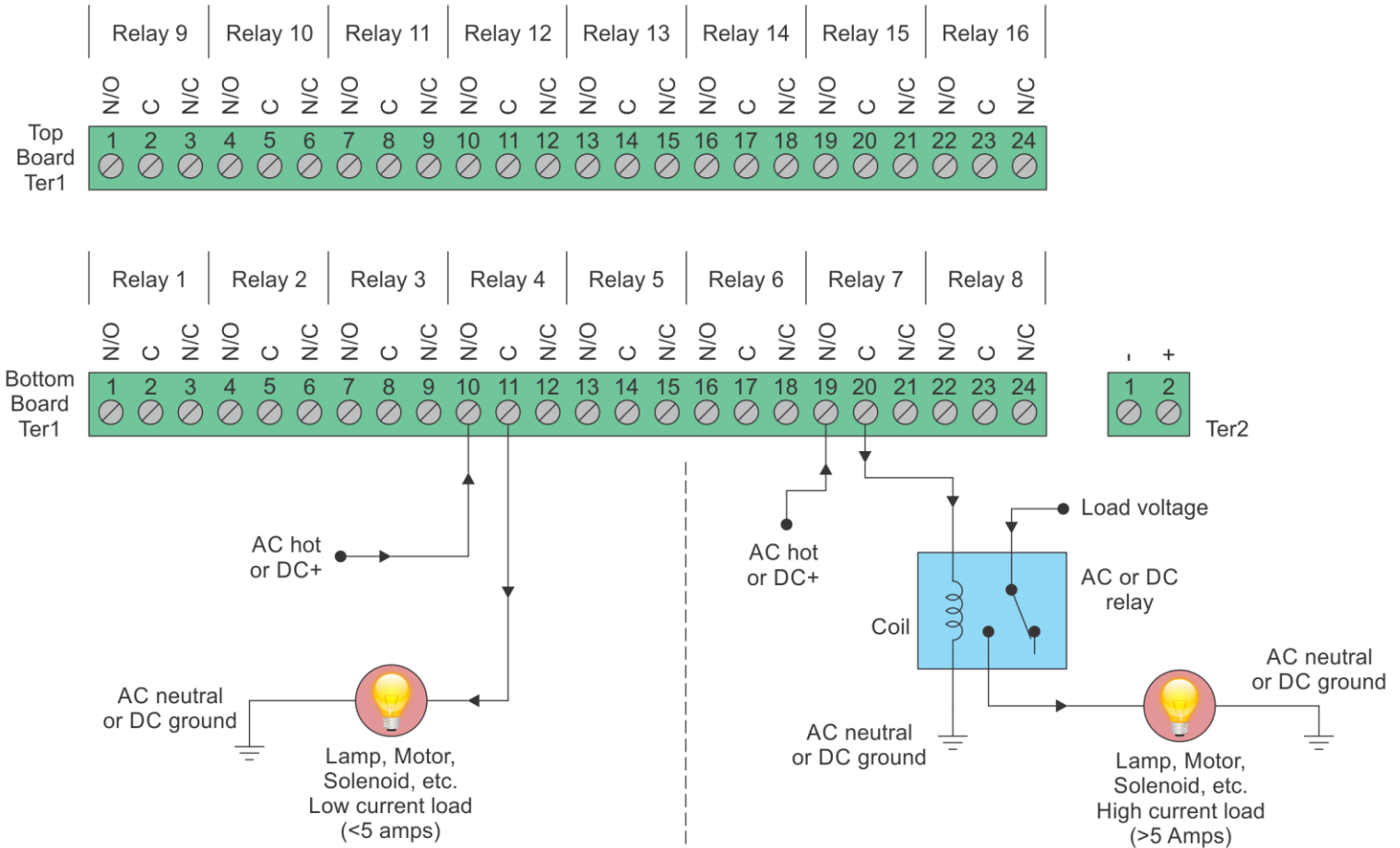
# RELAY OUTPUT WIRING

## 16-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.