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PRODUCT INFORMATION BULLETIN

AIR-EAGLE® XLT
900MHz RF Transceiver
MODEL 441AN/D-40400-120VAC

DESCRIPTION

The AIR-EAGLE XLT RF TRANSCEIVER IS designed to transmit and receive unique signals from one or more transceivers located up to 2500 feet (or more) away. This model comes equipped with four 4-20mA analog inputs, four dry contact inputs, four 4-20mA analog outputs and four dry contact relay outputs. This allows the user to not only transmit information out but receive a confirming signal back that the operation was performed. The Air-Eagle XLT TRX is user-programmable for up eight network frequencies to allow multiple systems to operate simultaneously in the same area and utilizes spread-spectrum technology to provide the utmost security and reliability even in the noisiest RF environments.

APPROVALS

United States (FCC)	MCQ-XB900HP
Canada (IC)	1846A-XB900HP
Australia	RCM
Brazil	ANATEL 3727-12-1209

INSTALLATION

DISCONNECT DC Power from all equipment before installation.

1. Mount the AIR-EAGLE XLT TRANSCEIVER in a convenient location.
2. Select unit configuration, and frequency (see page 2)
3. Install input & output wiring to the terminal strip
4. Install antenna to TNC connector on the right side of the enclosure.
5. Connect supplied power input cable to your external power source.

INPUT TERMINAL STRIP WIRING

ANALOG INPUTS		DIGITAL INPUTS	
1	- Input 1	9	Common Input 1
2	+ Input 1	10	Input 1
3	- Input 2	11	Common Input 2
4	+ Input 2	12	Input 2
5	- Input 3	13	Common Input 3
6	+ Input 3	14	Input 3
7	- Input 4	15	Common Input 4
8	+ Input 4	16	Input 4

OUTPUT TERMINAL STRIP WIRING

RELAY OUTPUTS		ANALOG OUTPUTS	
1	Relay 1 N/O	13	Not Used
2	Relay 1 C	14	Not Used
3	Relay 1 N/C	15	4-20 Out 1 -
4	Relay 2 N/O	16	4-20 Out 1 +
5	Relay 2 C	17	Not Used
6	Relay 2 N/C	18	Not Used
7	Relay 3 N/O	19	4-20 Out 2 -
8	Relay 3 C	20	4-20 Out 2 +
9	Relay 3 N/C	21	Not Used
10	Relay 4 N/O	22	Not Used
11	Relay 4 C	23	4-20 Out 3 -
12	Relay 4 N/C	24	4-20 Out 3 +
		25	Not Used
		26	Not Used
		27	4-20 Out 4 -
		28	4-20 Out 4 +

POWER INPUT TERMINAL STRIP WIRING

POWER INPUT	
Terminal #1	(-) 12VDC from supplied AC wall plug adapter
Terminal #2	(+)12VDC from supplied AC wall plug adapter

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GENERAL OPERATION

Contact closures on inputs 1 thru 4 in the control transceiver transmit to activate relays #1 thru #4 in the remote transceiver. Closures on inputs from the remote equipment transmit to energize relays #1 thru #4 in the control transceiver.

Analog inputs 1 thru 4 in the control transceiver transmit to analog outputs 1 thru 4 in the remote transceiver. Analog inputs 1 thru 4 in the remote receiver transmit to analog inputs 1 thru 4 in the control transceiver.

If signal from the other transceiver is lost then all relays will de-energize and all analog outputs will set to 4mA. See 4-20mA Output for more details of the analog section.

DIGITAL INPUT ACTIVATED	ACTION
"1"	Transmits channel 1 command to remote unit
"2"	Transmits channel 2 command to remote unit
"3"	Transmits channel 3 command to remote unit
"4"	Transmits channel 4 command to remote unit
INPUT CHANNEL CODE RECEIVED	ACTION
"1"	Relay 1 energizes, maintained momentary
"2"	Relay 2 energizes, maintained momentary
"3"	Relay 3 energizes, maintained momentary
"4"	Relay 4 energizes, maintained momentary

ANALOG INPUT ACTIVATED	ACTION
"1"	Transmits channel 1 data to remote unit
"2"	Transmits channel 2 data to remote unit
"3"	Transmits channel 3 data to remote unit
"4"	Transmits channel 4 data to remote unit
ANALOG INPUT CHANNEL CODE RECEIVED	ACTION
"1"	Analog output 1 receives data
"2"	Analog output 2 receives data
"3"	Analog output 3 receives data
"4"	Analog output 4 receives data

4-20 mA OUTPUT

When first powered on the 4-20mA outputs will be set to 4mA. If a signal is being received then is lost for 15 seconds the 4-20mA output will drop to 4mA. Since the analog input on the transmit side is mirrored by the analog output on the receive side, if the input side opens and is supplying 0 mA then the receive side will show the same 0 mA. This can be useful to detect an open line on either the receive or transmit side. Once the input is restored the current value will be output on the receiver.

SETTINGS

The unit is shipped from the factory with SEL1 switches in the open positions. Make setting changes as desired following the instructions/table below.

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

CONFIGURATION

SEL1 SWITCH NUMBER	OPEN	CLOSED
SW1	Secondary (default)	Primary

Note: There must be one Primary unit and one Secondary unit per system.

FREQUENCY SET-UP

SEL1	Network Frequency	SW5	SW6	SW7
(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

Note – Switches 2, 3 and 4 are not used on this model. Leave in OPEN position

SPECIFICATIONS

Power Input	100-240 VAC, 16 W, 50/60 Hz from supplied wall adapter
Fuse Protected	1 amp
Frequency	900MHz Spread Spectrum
Transmit Data	Four 4-20mA Inputs & Four Dry Contact Inputs
Analog Outputs	4-20mA
Relay Contacts	SPDT 5 amp @ 120VAC or 30VDC per channel
RF Output Power	250 mW
Transceiver Range	Up to 2500 Feet w/standard antenna
RF Channels	Eight independent network frequencies
Enclosure	Hinged fiberglass with window / NEMA 3, 3R, 4, 12, 13
Operating Temp	-40° F to +185° F

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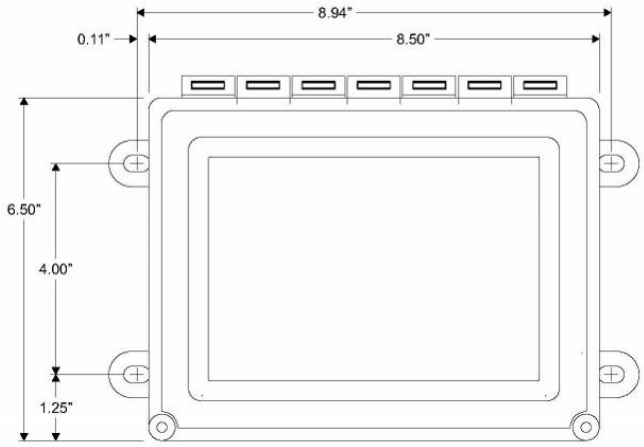
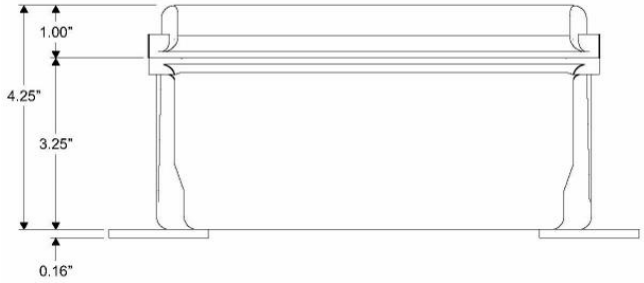
DIMENSIONS





ACCESSORIES

Standard Antenna (Included):	
900MHz TNC “Rubber Duck” Antenna	49-1103
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	
900MHz Thru-Hole Mount Mobile Antenna	49-2101
900MHz Magnet Mount Mobile Antenna	49-2102
900MHz Omni Directional Base Antenna	49-3101
900MHz Yagi Directional Base Antenna	49-3102
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)

DOCUMENT DATE: 03/24/2022 / PRODUCT REV. 0

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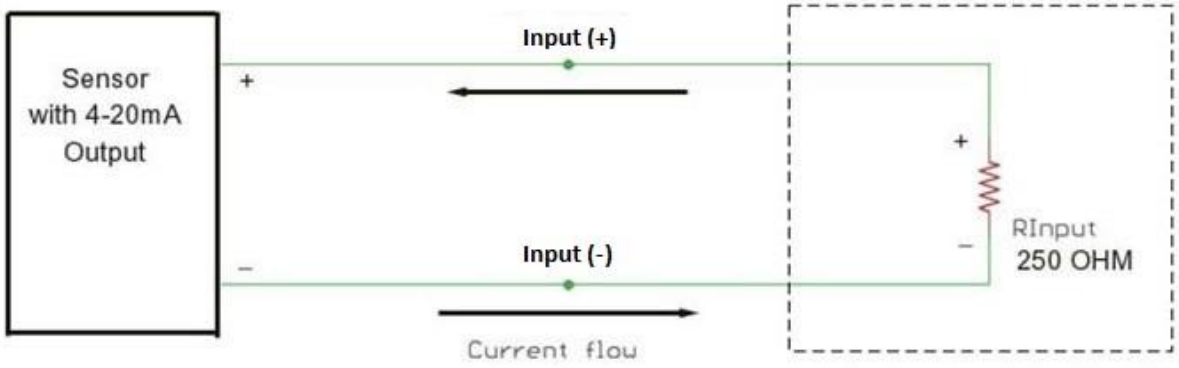
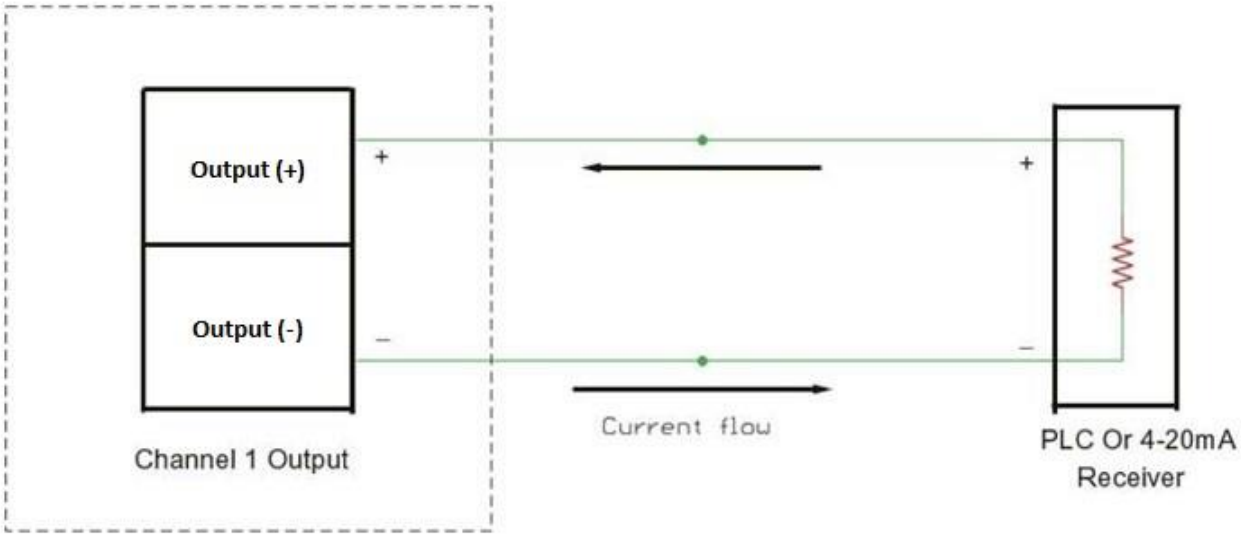
4-20mA Installation



The above diagram shows a 4-20mA sensor hooked to channel 1 input. The 250 Ohm input resistor will drop a voltage of 1 Volt at 4mA and 5 Volts at 20mA. The sensor may be of any type and voltage that has a 4-20mA output. Even if the sensor runs on a voltage higher than 5 volts the current is still maintained between 4 and 20 milliamps so that the voltage drop on the resistor is always between 1 and 5 volts. Remaining voltage is dropped internally in the sensor. Loop powered sensors are not able to be used on this particular unit.



The above diagram shows the channel 1 output hooked to a 4-20mA receiver or PLC. The input resistance of the receiver can be up to 500 ohms. Anything higher and the current will be limited to below 20 mA since the maximum output voltage of the channel outputs is 10 volts.