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# PRODUCT INFORMATION BULLETIN

## AIR-EAGLE® XLT PLUS REMOTE STOP SWITCH 900 MHz RF Transmitter MODEL 497-5100-CHx-DC



### DESCRIPTION

The AIR-EAGLE XLT PLUS RADIO REMOTE STOP SWITCH is a machine mounted R.F. REMOTE STOP SWITCH designed to transmit a unique STOP signal to the AIR-EAGLE XLT PLUS RECEIVER. This system is designed to monitor and protect up to 8 dozer operators operating on a coal stock pile(s). The large center mounted STOP switch allows easy access by the operator. The unit includes a log-in/log-out button for system activation and raw coal/clean coal receiver selection. The log-in relay channel is user selectable and must be designated for each transmitter (see DOZER LOG-IN CHANNEL & RECEIVER LOG-IN OPTIONS SELECTION table). Dual color LED's provide a visual display of system status, linked receiver, and signal strength.

### SYSTEM OVERVIEW

Once operator has reached the hazardous area he must log-in to Base Receiver 1 or 2 to alert the system to his presence and allow monitoring to begin. LED indicators guide this process and provide visual indication of various statuses. If at any time the operator pushes the STOP button, the stop signal is immediately sent to the receiver to shut down underground feeders and alert emergency personnel. When the operator wishes to leave the area, prior to exceeding the range of the transmitter, he must push the LOG-OUT button to avoid having an unnecessary shut-down signal sent to the receiver.

**Note – If the RF link is broken or DC power is lost, this will also initiate a stop condition at the remote receiver.**

### LOGGING IN & OUT TO THE RECEIVER

<b>TO LOG IN</b>	By default, the transmitter is set to log in to Receiver #1 only. By using the dip switches on SEL1, you can change the set-up to have the transmitter log in to Receiver #2 only, or give the user the ability to select which receiver to log into. (See RECEIVER LOG-IN OPTIONS) When the transmitter is set up to give a choice of receivers to log into ( <b>SW6 CLOSED</b> ), use the following procedure:  Press the LOG-IN BUTTON momentarily to log into Receiver #1. The RX.1 LED will blink for 3 seconds then illuminate solid when link established. If the LOG-IN BUTTON is depressed a second time during this 3 second period, the unit will attempt to log in to Receiver #2 instead and the RX.2 LED will blink for 3 seconds then illuminate solid when link established
<b>TO SWITCH RECEIVERS (SW6 CLOSED)</b>	Tap the LOG-IN BUTTON to switch between "raw coal" and "clean coal" receivers. LED for new receiver will blink then illuminate solid with link established. Old receiver will log out and extinguish LED
<b>TO LOG OUT</b>	Press and hold the LOG-IN BUTTON for 3-4 seconds. Current receiver's LED will blink until log out occurs, then extinguish. LED will not go out until the unit has received verification that the logout process was successful.

### CONTROLS & INDICATORS

<b>STOP ACTUATOR</b>	Latching pushbutton transmits a unique code continuously to the remote receiver until the operator resets the pushbutton.
<b>LOG-IN/LOG-OUT BUTTON</b>	A momentary pushbutton used to set which receiver the transmitter is to link with and alert the system that the user is entering or leaving the hazardous location
<b>PWR/SIG/TX LED</b>	Dual color LED used to indicate power (when not logged in) and signal strength (when logged in)
Solid Green	Indicates Power On (when not logged in) Indicates High Signal Strength (when logged in)
Blinking Green	Indicates Medium Signal Strength (when logged in)
Blinking Red	Indicates Low Signal Strength (when logged in)
Solid Red	Indicates STOP button depressed (when logged in)
<b>RECEIVER LEDs</b>	Green LEDs indicate which receiver the unit is logged into
RX.1 - On solid	Indicates logged into receiver #1
RX. 2 – On solid	Indicates logged into receiver #2
RX1 or RX2 - Blinking	Indicates unit is switching receivers

# AIR-EAGLE® XLT PLUS

REMOTE STOP SWITCH  
900 MHz RF Transmitter

**MODEL 497-5100-CHx-DC**

## INSTALLATION

1. Mount transmitter in cab of dozer where operator will have easy access to the STOP button and can see LEDs.
2. Select Dozer Log-In Channel Number and Receiver Log-In Options
3. Install external antenna on vehicle roof at least 3 feet from any other antenna and connect the antenna's coax plug onto the TNC connector on the side of the transmitter.
4. A ten foot 2-conductor pigtail has been provided for DC power. **DC power should be wired directly to the dozer battery!!**  
(Black = -9-36VDC / Red = +9-36VDC) Note! Be careful to observe polarity.
5. Make sure that the base receivers and/or repeaters are properly installed and powered up prior to attempting to "Log-In"

## DOZER LOG-IN CHANNEL & RECEIVER LOG-IN OPTIONS SELECTION

### USING SEL1 DIP SWITCHES:

#### DOZER LOG-IN CHANNEL NUMBER

Dozer Channel	SW1	SW2	SW3
CH.1 (default)	OPEN	OPEN	OPEN
CH.2	CLOSED	OPEN	OPEN
CH.3	OPEN	CLOSED	OPEN
CH.4	CLOSED	CLOSED	OPEN
CH.5	OPEN	OPEN	CLOSED
CH.6	CLOSED	OPEN	CLOSED
CH.7	OPEN	CLOSED	CLOSED
CH.8	CLOSED	CLOSED	CLOSED

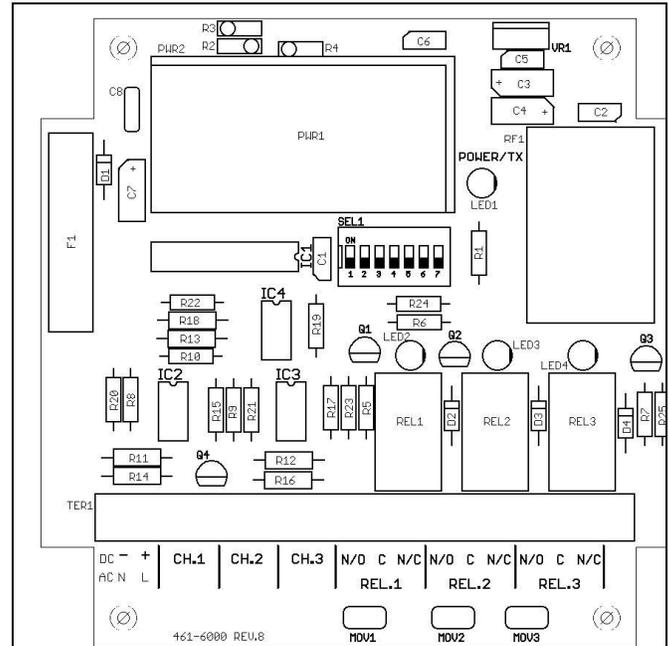
#### RECEIVER LOG-IN OPTIONS

Receiver Selection	SW5	SW6
RECEIVER 1 ONLY (default)	OPEN	OPEN
RECEIVER 2 ONLY	CLOSED	NOT USED
EITHER RECEIVER	OPEN	CLOSED

Note – SW4 is not used and should be left open

## TERMINAL STRIP WIRING INFORMATION

Note -This unit has been pre-wired at the factory – the following information is for reference only.



### TERMINAL STRIP WIRING (TER1)

Terminal 1	Negative (-) 9-36VDC INPUT
Terminal 2	Positive (+) 9-36VDC INPUT
Terminal 3	Log-In Button (N/O)
Terminal 4	Log-In Button (Common)
Terminal 5	Stop Button (N/O)
Terminal 6	Stop Button (Common)
Terminal 7	Not Used
Terminal 8	Not Used
Terminal 9	Ch.1 Relay (N/O)
Terminal 10	Ch. 1 Relay (Common)
Terminal 11	Ch. 1 Relay (N/C)
Terminal 12	Ch.2 Relay (N/O)
Terminal 13	Ch. 2 Relay (Common)
Terminal 14	Ch. 2 Relay (N/C)
Terminal 15	N/O Relay 3
Terminal 16	C Relay 3
Terminal 17	N/C Relay 3
Terminal 18	Not Used

## SPECIFICATIONS

Power Supply	External 9-36VDC from mobile vehicle
Maximum Number of Transmitters	8 Transmitters to 1 Receiver
Transmit Frequency	900 MHz - 74 Channel Auto-Select
RF Output Power	1 Watt
Transmit Range	Approximately 4500 feet

# AIR-EAGLE® XLT PLUS

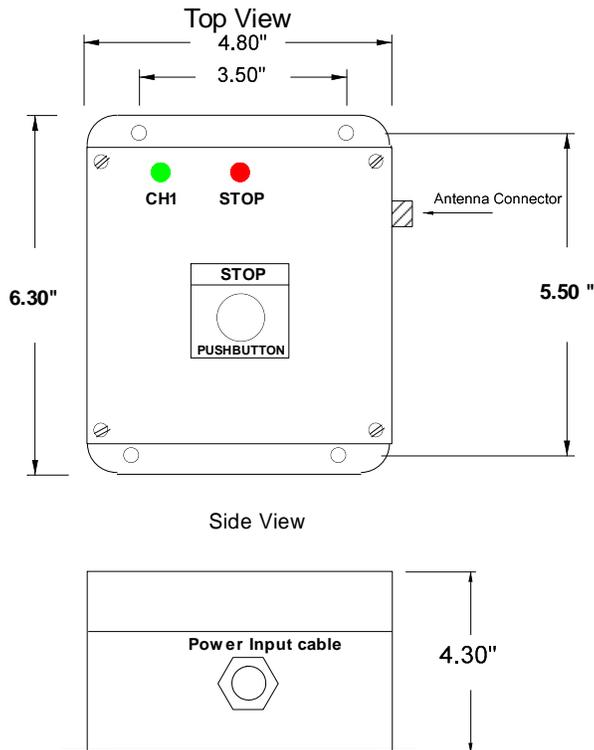
REMOTE STOP SWITCH  
900 MHz RF Transmitter

**MODEL 497-5100-CHx-DC**

## APPROVALS

United States (FCC)	MCQ-XBPSX
Canada (IC)	1846A-XBPSX

## DIMENSIONS



## 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.

DOCUMENT DATE: 1/30/20 / PRODUCT REV.6



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# Air-Eagle XLT Plus, Dozer Stop Switch System Installation Notes

## Dozer E-Stop Placement

### Dozer components:

- 1) Dozer stop switch transmitter (Model 497-5100-CHx-DC)
- 2) Magnetic roof-mount antenna (Model 49-2102)

The transmitter should be located in the cab of the vehicle, mount so the operator can see the visual status LED's and be able to reach and depress the STOP SWITCH if needed.

A two-conductor cable is supplied to power the dozer transmitter. The black lead is always negative.

Depending on the cable/ plug supplied, the white wire (or red) will go directly to the vehicle battery power. The voltage range is 9VDC up to 36VDC.

If using, connect tilt switch inputs to the proper terminals on the input terminal strip.

Next, mount the magnetic roof-mount antenna on the roof of the dozer. Always try to find a location as far as possible (at least 3 feet) from any other antennas that may be on the roof of the dozer. Feed the cable into the cab of the dozer and attach by screwing the "TNC" connector to the "RF" connector on the right side of the transmitter.

## Receiver & Optional Repeater Placement – See Placement Per Your Configuration Below:

**Configuration #1** - If your PLC I/O controls are located at the stock pile, the receiver is to be mounted there on the stacking tubes.

### Receiver components:

- 1) 16 Relay receiver in NEMA 4 enclosure (Model # 497-5280)
- 2) TNC "T" adapter (Model 49-5001)
- 3) Two Coax cables with connectors (Model 49-4000-XX)
- 4) Two Omni directional antennas with mounting hardware (Model 49-3101)

Locate a 120VAC source for powering the receiver.

Mount two omni antennas on the rail or floor of the cat walk. It is recommended to have the antennas mounted on opposite corners of the cat walk, pointing "down", below the cat walk floor, at the dozer stock pile to get a good 360-degree reception pattern around the stacking tube(s).

Attach coax cables to each antenna then connect to the receiver via the "T" adapter which connects to the TNC antenna connector on the side of the receiver.

**Configuration #2** - If your PLC I/O controls are located in a separate control room, a repeater is to be mounted at the stock pile and the receiver is to be located at the control room

**Repeater components:**

- 1) Repeater in NEMA 4 enclosure (Model 497-4500-120VAC)
- 2) TNC "T" adapter, (Model 49-5001)
- 3) Two Coax cables with connectors (Model 49-4000-XX)
- 4) Two Omni directional antennas with mounting hardware (Model 49-3101)

Locate a 120VAC source for powering the repeater.

Mount two omni antennas on the rail or floor of the cat walk. It is recommended to have the antennas mounted on opposite corners of the cat walk, pointing "down", below the cat walk floor, at the dozer stock pile to get a good 360-degree reception pattern around the stacking tube(s).

Attach coax cables to each antenna then connect to the repeater via the "T" adapter which connects to the TNC antenna connector on the side of the repeater.

**Receiver components:**

- 1) 16 relay receiver in a NEMA 4 enclosure (Model # 497-5280)
- 2) Coax cable with connectors (Model 49-4000-XX)
- 3) Omni directional antenna with mounting hardware (Model 49-3101)

The receiver is recommended to be located at the PLC I/O cabinet in the control room.

Locate a 120VAC power source for this receiver.

Mount the omni antenna on the outside of the plant, as high as possible so the antenna can "see" the antenna from the repeater located at the stacker tube for maximum performance and range.

Attach coax cable to the antenna then connect to the TNC antenna connector on the side of the receiver.

Install control wiring from the relays in the receiver to the belt feeder control circuits. See product information bulletin for relay output logic.