

## **EV-490 Transmitter**

### **Overview:**

The Secure Wireless sample transmitter for AMAC has two tact switches on the printed circuit board (PCB) that allow flexibility in operation and programming. When in standard AMAC mode pressing anywhere on the top of the button will ensure that either or both of the PCB tact switches will be depressed. If any tact switch is pressed, the unit will send its transmission immediately.

### **Programming:**

In programming you can choose to change the serial number OR change the operation of the transmitter from supervised to supervised with polling.

#### **To change the serial number:**

- 1) Press and HOLD both buttons on the AMAC sample transmitter. You will need to press both the upper right and upper left corners of the one button to make sure that you are pressing both buttons simultaneously.\*
- 2) Continue holding the buttons, The LED will turn OFF after it is done transmitting (approximately 3 seconds) and will turn back ON after approximately 5 additional seconds, RELEASE both buttons.
- 3) Use the left tact switch for a '0' and the right for a '1'. Example; if the AMAC code that you desire is 28 then you will enter the data as follows;

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| — | — | — | — | — | — | — | — |

- 4) You will also need to add a 0001 for a regular AMAC remote or a 1110 for a silent panic type key.

I believe this encoding may be **different** from what you have done in the past but this is the right format for Hex to Binary encoding.

- 5) Once all 12 digits have been entered the LED will flash rapidly.

\* I have supplied a two button rubber insert for programming if you feel it is easier during the programming sequences.

#### **To change from Supervised to Supervised with Polling:**

- 1) Press and HOLD both buttons on the AMAC sample transmitter. You will need to press both the upper right and upper left corners of the one button to make sure that you are pressing both buttons simultaneously.\*

- 2) Continue holding the buttons, The LED will turn OFF after it is done transmitting (approximately 3 seconds) and will turn back ON after approximately 5 additional seconds, WAIT until the LED begins to flash (approximately 5 seconds). The total hold time is approximately 13 seconds. Once the LED is flashing, Release buttons.
- 3) Press Button # 1 (left) for Standard AMAC supervised unit. LED will confirm choice with 1 flash OR Press button # 2 (right) for Supervised with polling, LED will confirm choice with 2 flashes.
- 4) For testing purposes this unit will supervise itself every 10 seconds and will send a supervisory heartbeat if programmed for supervised with polling.

\* I have supplied a two button rubber insert for programming if you feel it is easier during the programming sequences.

### **Battery Information:**

Battery statistics are as follows:

4.8uA Standby Current

1.8uA Wake up time

.001uA Supervisory

.17uA 1 Button press per day

6.771uA Total battery draw

Battery is a CR2025 with 160mA power

Calculation is as follows:

$(160,000/6.771)/8760 = \underline{2.6975}$  years on average

This is actual field usage since you do not activate the battery until it is ready for use.

### **Supervisory with Polling Transmission:**

When a heartbeat is sent every 12 hours it only sends that data packet 5 times. It does NOT transmit for 3 full seconds.

It is Secure Wireless' recommendation that you change your supervisory heartbeat to be every 1-3 hours so that we can transmit quickly and go back to sleep to conserve battery power instead of transmitting in full every 12 hours. This does a few things for you. You can miss multiple transmissions in a row a still not trigger a false positive and it allows you to save some battery life. If you choose to do a full transmission every 12 hours your estimated battery life will be 2.63 years.

### **Default Programming:**

The AMAC unit will be pre-programmed at the factory with a standard code and defaulted as a standard supervised device. Because this remote does not have EEPROM when the batteries are changed you will potentially need to reprogram the serial number and if it was supervised with polling before.

When the batteries are removed and replaced it will default to its original serial number and as a standard supervised AMAC remote. If the unit had any other programming it will need to be done again.

### **Low Battery Trigger:**

Currently we check for a low battery every 12 hours for 3 consecutive wake ups. That means that when a low battery is detected we must see it on three consecutive occasions before we will lock and transmit low battery. When the AMAC remote detects low battery it will take a minimum of 36 hours before it will transmit.

Although this can be changed to any other format, we feel this is best in case of low temperature conditions. For example: If someone accidentally leaves their remote in their car overnight and the temperature drops below freezing, the remote may detect a low battery since the batteries themselves drop voltage over temperature. We will wait until two more sessions (24 Hours) before we will send a signal.

---

## **Federal Communications Commission (FCC) Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.