# eMax™ EAS Detector

## *Installation and Troubleshooting Guide*

- **ZAEMAX2-2 Dual Pedestals**
- **ZAEMAX2-1F1 Pedestal with 2 Ranger Antennas**

## About this Guide

This guide explains how to install and test the *e*Max detector. Other related documents are:

- Quick Install Guide, 8000-2853-02
- Quick Install Guide, 8000-2853-03

## If you need assistance...

Call Sensormatic Customer Support at:

1-800-543-9740 (NAR CRC or Tech. Support)

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# Installation

This section contains procedures for installing dual pedestals or installing one pedestal with dual ranger antennas.

## Installing Dual *e*Max Pedestals

The *e*Max detector consists of a transmit pedestal and a receive pedestal. Two ranger antennas can be used instead of the receive pedestal, see “Installing Ranger Antennas”, page __.

### Parts Required

Install Kit, _____

| | |
|---|---|
| Pedestal, Transmit | 1 |
| Pedestal, Receive | 1 |
| Anchors | 8 |
| Interconnect cable | 1 |
| Wiremold Kit | 1 |

To install the transmit pedestal with the interconnect cable routed through the floor, see page __. To install the transmit pedestal with the interconnect cable routed over the doorway, do the following:

### Dual Pedestal Installation with Cables Over Doorway

This procedure shows how to install a transmit pedestal (the one with the power cord) and a receive pedestal with their interconnect cable routed over the exit between them.

**IMPORTANT!** The transmit pedestal can be installed either on the right or left side of the exit. In this example, the pedestal is mounted on the right side of the exit and the receive pedestal on the left.

**Note:** If the transmit pedestal is to be connected to 240Vac, see page __.

1. Place pedestal bases 1.2m (4 ft) apart, center-to-center, ensuring they are equidistant from the door frame. Using a pencil, mark the outline of each base and mounting hole locations. Move the bases out of the way and drill mounting holes 9cm (3-1/2 in.) deep using a 1.25cm (1/2 in.) drill bit.

2. Run 7.6m (25 ft) interconnect cable supplied through Wiremold supplied from base to base.

3. Ensuring the end of the interconnect cable exits the top of each base and extends .3m (1 ft) above it, secure each base using anchors supplied.

4. For transmit (Tx) and receive (Rx) pedestals, ensuring the cover screws are facing the exit, connect the cable exiting the pedestal to the interconnect cable exiting the base. Also for the Tx pedestal, position the power cord in the outside groove of the base as shown.

   With cover screws facing the exit, slip each pedestal over its base. Press down for a tight fit.

5. Plug the pedestal-side of the extension cord supplied into the power cord exiting the base and the other end of the extension cord into an AC outlet (a green lamp at the top of the transmit pedestal will light).

   **Note:** A red lamp will blink once every 4 seconds to indicate that the system is looking to avoid noise from nearby electronic equipment or to sync to the quietest ac line phase (auto phasing). Auto phasing can take from 1 to 20 minutes depending on noise encountered.

   **Note:** Once auto phasing completes, the pedestal emits an audio/visual alarm for 2 seconds to indicate it is ready for routine operation. If the red lamp starts to blink twice every 4 seconds for one minute, then tagged displays may be too close to the system. See “False Alarms” on page __.

6. To check system performance, hold a known good security tag perpendicular to the antennas and walk it through each boxed area shown, stepping out from between the antennas each time. The transmit pedestal should alarm each time the tag approaches the area between the pedestals.

## Dual Pedestal Installation with Cables in Floor

This procedure shows how to install a transmit pedestal (the one with the power cord) and a receive pedestal with their interconnect cable routed through the floor between them.

**IMPORTANT!** The transmit pedestal can be installed either on the right or left side of the exit. In this example, the pedestal is mounted on the right side of the exit and the receive pedestal on the left.

**Note:** If the transmit pedestal is to be connected to 240Vac, see page __.

1. Place pedestal bases 1.2m (4 ft) apart, center-to-center, ensuring they are equidistant from the door frame. Using a pencil, mark the outline of each base and mounting hole locations. Move the bases out of the way and drill mounting holes 9cm (3-1/2 in.) deep using a 1.25cm (1/2 in.) drill bit.

2. Cut a 2cm (3/4 in.) deep by .6cm (1/4 in.) wide trench in the floor between the bases.

   Ensuring ends of the 3m (10 ft) interconnect cable supplied will exit the top of each base and extend .3m (1 ft) above it, lay the cable in the trench and cover it with appropriate floor material (see instructions supplied with material for application and drying time).

3. Route the end of the interconnect cable through each base and secure each base to the floor using anchors supplied.

4. For transmit (Tx) and receive (Rx) pedestals, ensuring the cover screws are facing the exit, connect the cable exiting the pedestal to the interconnect cable exiting the base. Also for the Tx pedestal, position the AC power cord in the outside groove of the base as shown.

   With cover screws facing the exit, slip each pedestal over its base. Press down for a tight fit.

5. Plug the pedestal-side of the extension cord supplied into the power cord exiting the base and the other end of the extension cord into an AC outlet (a green lamp at the top of the transmit pedestal will light).

   **Note:** A red lamp will blink once every 4 seconds to indicate that the system is looking to avoid noise from nearby electronic equipment or to sync to the quietest ac line phase (auto phasing). Auto phasing can take from 1 to 20 minutes depending on noise encountered.

   **Note:** Once auto phasing completes, the pedestal emits an audio/visual alarm for 2 seconds to indicate it is ready for routine operation. If the red lamp starts to blink twice every 4 seconds for one minute, then tagged displays may be too close to the system. See “False Alarms” on page __.

6. To check system performance, hold a known good security tag perpendicular to the antennas and walk it through each boxed area shown, stepping out from between the antennas each time. The transmit pedestal should alarm each time the tag approaches the area between the pedestals.

# Installing an *e*Max Transmit Pedestal/Dual Ranger Receive Antenna System

This procedure shows how to install an *e*Max transmit pedestal and two Ranger receive antennas with their interconnect cable routed over the exit between them. Ranger antennas can mounted using screws or double-sided tape. When mounting to a door frame, double-sided tape can be used.

**Note:** If the transmit pedestal is to be connected to 240Vac, see page __.

IMPORTANT!

- Antennas must be directly opposite the pedestal and no more than .91m (3') from the center of each coil in the pedestal. See if you can mount the antennas to a structure nearest the pedestal, such as the door frame.
- Antennas must be mounted vertically with their arrows pointing in the same way; both face up or both face down.
- The top antenna must be 95cm (37.5 in.) from the floor; the bottom antenna must be 38cm (15 in.) from the floor.
- DO NOT install the cover until after verifying system operation. If you accidentally install the cover, you can disengage it by pressing a straightened paper clip into the small hole in each end of the cover.

## Parts Required

Install Kit, _____

| | |
|---|---|
| Pedestal, Transmit | 1 |
| Anchors | 8 |
| Interconnect cable | 1 |
| AC extension cord | 1 |
| Wiremold Kit | 1 |

Install Kit, ZKRANGER-1

| | | |
|---|---|---|
| Ranger Antenna | 2 | 0300-1787-01 |
| Cover Ranger | 2 | 0300-2015-01 |
| Prep Pad, Alcohol, Sterile, Small | 1 | 1600-0033 |
| Anchor, Plastic, w/o screw, 8-10 | 8 | 2880-0083-01 |
| Screw, Typ AB, PHP, Cad, #8x1 | 8 | 2816-7634-44 |
| Mount, Adhesive Back | 1 | 6009-0004 |
| Cable, Short | 1 | 0650-1984-01 |
| Cable Tie, Nylon | 1 | 6009-0002 |
| **In kit but not used:** | | |
| Cable, Long | 2ft | 6002-0023-01 |
| Filter, EMI, Ferrite, Clamp | 1 | 2700-0023-01 |

## Procedure

This procedure shows how to install an *e*Max transmit pedestal and two Ranger receive antennas.

**IMPORTANT!** The transmit pedestal can be installed either on the right or left side of the exit. In this example, the pedestal is mounted on the right side of the exit and ranger antennas on the left. In this case, arrows molded into the Ranger antennas must face down. If the installation is to be reversed (Rangers on the left), arrows in the Ranger antennas must face up.

1. Ensure eMax pedestal and Ranger antennas are .9m (3 ft) apart, center-to-center, then using a pencil, mark the outline of the pedestal base and its mounting hole locations. Move the base out of the way and drill mounting holes 9cm (3-1/2 in.) deep using a 1.25cm (1/2 in.) drill bit.

   Outline mounting locations on the side of the exit for Ranger antennas. The top antenna must be 95cm (37.5 in.) from the floor; the bottom antenna must be 38cm (15 in.) from the floor.

2. Run the 7.6m (25 ft) interconnect cable supplied through Wiremold supplied from the base location to the top antenna. Position Wiremold between top and bottom Ranger antennas.

3. Position the base ensuring the end of the cable (with the connector) exits the center of the base and extends .3m (1 ft) above it. Secure the base using anchors supplied.

4. Wipe the surface inside the outline clean with the alcohol pad and let dry. Then, ensuring its arrows are facing the appropriate way (up for the right side of the exit, down for the left side), secure each Ranger antenna by peeling the lining off the adhesive and affixing the antenna in place.

5. Cut the un-terminated end of the interconnect cable to length, strip the cable jacket back about an inch, and strip the black, red, green, and white wires. Connect wires to the four-position terminal block J1 in the top Ranger antenna as shown.

   Cut the short cable to length, allowing slack to crimp drain wire. On both ends of the short cable, strip the cable jacket and the white and green wires. On each Ranger antenna,

connect the white wire to terminal 1 and the green wire to terminal 2.

**IMPORTANT!** DO NOT install antenna covers until you have verified system operation. If you accidentally install a cover, you can disengage it by pressing a straightened paper clip into the small hole in each end of the cover.

6. With the cover screws of the pedestal facing the exit, connect the cable exiting the pedestal to the interconnect cable exiting the base. Also, position its power cord in the outside groove of the base as shown.

   With cover screws facing the exit, slip the pedestal over its base. Press down for a tight fit.

7. Using pliers, bend and remove cable access knockouts from the top and bottom of the cover intended for the Ranger top antenna. Also remove the knockout from the top of the cover intended for the Ranger bottom antenna. Route cables through channels in the antenna assembly and snap covers in place as shown.

8. Plug the pedestal-side of the extension cord supplied into the power cord exiting the base and the other end of the extension cord into an AC outlet (a green lamp at the top of the transmit pedestal will light).

   **Note:** A red lamp will blink once every 4 seconds to indicate that the system is looking to avoid noise from nearby electronic equipment or to sync to the quietest ac line phase (auto phasing). Auto phasing can take from 1 to 20 minutes depending on noise encountered.

   **Note:** Once auto phasing completes, the pedestal emits an audio/visual alarm for 2 seconds to indicate it is ready for routine operation. If the red lamp starts to blink twice every 4 seconds for one minute, then tagged displays may be too close to the system. See “False Alarms” on page __.

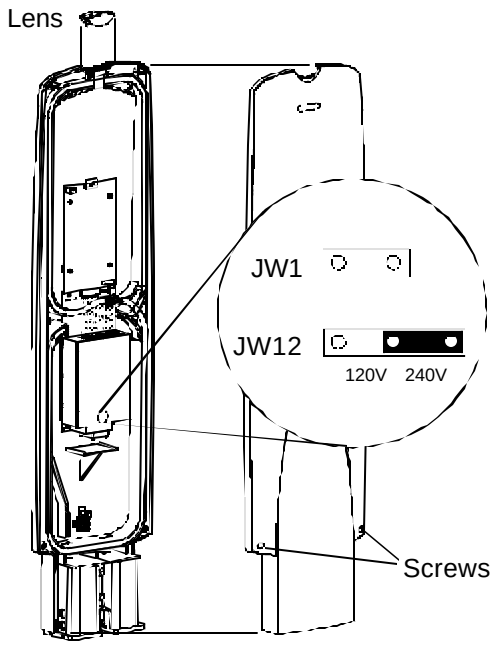
9. To check system performance, hold a known good security tag perpendicular to the antennas and walk it through each boxed area shown, stepping out from between the antennas each time. The transmit pedestal should alarm each time the tag approaches the area between the pedestals.

# Setting the Transmit Pedestal for 240Vac

**WARNING:** RISK OF ELECTRIC SHOCK! Disconnect the transmit pedestal from the AC source BEFORE making this adjustment.

A jumper adjustment inside the transmit pedestal allows it to be connected to a 240Vac power source. To prepare the pedestal, do the following:

1. Pull up on the lens cover to detach it.
2. Loosen the two captive screws securing the pedestal cover.
3. Slip a slotted screwdriver between the covers where shown to “pop” them apart.
4. Remove plug to access the jumpers JW1 and JW12.
5. Remove jumper JW1 and move jumper JW12 to the 240Vac setting.
6. Reinstall the cover by performing Steps 1–3 in reverse order.




# Troubleshooting

## Dead System

**Note:** If the transmit pedestal emits a degrading sound (dying gasp), this sound is an indication that power was just removed from the pedestal.

If the green lamp at the top of the transmit pedestal is not on, the pedestal may be without power. Ensure the detector is connected to the power source.

If the pedestal is connected to the AC outlet, check that the circuit breaker in your store’s breaker box is not tripped. If it is, reset it and recheck detector performance.

If the breaker will not stay on, call maintenance. If breaker is OK, the detector needs service. Call for assistance.

## False Alarms

Nearby electronic devices or hidden tags can cause the transmit pedestal to alarm.

1. To help you diagnose the problem, observe the red alarm light. What is it doing?
   - Flashing once every 4 seconds (auto phasing mode). Detector is attempting to adjust to nearby electronic equipment. Turn off nearby signs and motors in the area one-at-a-time and see if the light goes out.
   - Flashing twice every 4 seconds. Tagged products are too close to the pedestals. Go to step 2.
2. Move all tagged products at least 3m (10 ft) from pedestals. Do alarms stop?
   - **Yes.** You are done.
   - **No.** Look for one or more hidden tags within 3m (10') of pedestals.

## Adjustments Using the Laptop

Using a laptop computer and Ultra•Post Configurator software, Version 5.0 or higher, you can bring a window up on the screen that allows you to:

- Turn the transmitter on and off.
- Observe current and voltage in each coil of the transmit pedestal.
- Adjust the gain of the receiver pedestal. Auto phasing must be disabled or off to do this.
- Observe noise averages and tag amplitudes.
- Observe the tag frequency (Proper Range?).
- Adjust the line sync delay.
- Turn auto phasing on and off.

## Specifications

### Electrical

Primary input.....110-120 Vac or 220-240 Vac @ 50-60Hz

Primary power fuse.....1 A, 250 V, slo-blow

Current draw.....0.7 A*rms* max.

Input power.....Less than 7 W

#### Transmitter

Outputs.....1 port for 1 antenna

Operating frequency.....58 kHz (±200 Hz)

Transmit burst duration.....1.6 ms

Transmit current.....12A peak

Burst repetition rate (50 Hz).....37.5 Hz (normal), 75 Hz (validation)

Burst repetition rate (60 Hz).....45 Hz (normal), 90 Hz (validation)

Transmit coil resistance.....1.9 ohms (±5%)

Pedestal alarm:

Lamp duration (?).....4 sec.

Audio duration (?).....2 sec.

Audio repetition rate (?).....5Hz

#### Receiver (eMax, Ranger)

Inputs.....1 port for 1 antenna

Center frequency.....58 kHz

Receive coil resistance, eMax.....3.16 ohms (±5%)

Receive coil resistance, Ranger.....__ ohms (±5%)

### Environmental

Operating temperature:.....0 to 50°C (32°–122°F)

Relative humidity: .....0 to 90% non-condensing

### Mechanical

#### *e*Max Pedestal Antenna

Height.....135 cm (53")

Width .....35 cm (13.753")

Depth.....12.3 cm (4.75")

#### Ranger Antenna

Height.....24.1 cm (9.5")

Width .....3.5 cm (1.38")

Depth.....8.6 cm (3.38")

# Declarations

## Regulatory Compliance

Emissions .....47 CFR, Part 15
Safety .....UL60950
CSA C22.2 No 60950

**FCC COMPLIANCE:** This equipment complies with Part 15 of the FCC rules for intentional radiators and Class A digital devices when installed and used in accordance with the instruction manual. Following these rules provides reasonable protection against harmful interference from equipment operated in a commercial area. This equipment should not be installed in a residential area as it can radiate radio frequency energy that could interfere with radio communications, a situation the user would have to fix at their own expense.

**EQUIPMENT MODIFICATION CAUTION:** Equipment changes or modifications not expressly approved by Sensormatic Electronics Corporation, the party responsible for FCC compliance, could void the user's authority to operate the equipment and could create a hazardous condition.

## Other Declarations

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