

# Sensar<sup>®</sup> Module

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## Installation

- a. Location
    - i. 10” from edge of coach
    - ii. 2’ from front of coach
  - b. Directional Handle
    - i. Extensions available (EK-1036)
  - c. Antenna Head
    - i. Tighten coax at antenna head
- II. Maintenance
- a. Silicone based lubricant
  - b. Lubricate every 6 months or when difficult to elevate/rotate
- III. Troubleshooting
- a. Wall plate light on?
  - b. Test Voltage at head
  - c. Test with new head
  - d. Test for voltage out of wall plate
- IV. Additional Tips
- V. Leak Test Procedure
- VI. Test

# Sensar<sup>®</sup> Antenna

*Note: Please take out the Winegard Sensar antenna installation/operation manual and follow along. This course will not cover every aspect of the manual, but will focus on key points. Please read the manual at your convenience.*

*Note: UHF band signals (TV channels 14 and higher), will have reduced range. Install the Winegard WINGMAN (RV-WING) for improved signal. Also, if the Sensar antenna has aluminum wings, upgrading the antenna head to one with painted white or gray wings will improve reception. Note: Digital (local) signal may be blocked by trees, buildings, etc., just about like satellite signals can be.*

## Installation

- Figure one shows mounting the antenna a minimum of 10 inches from the edge of the roof. It is safe to mount the antenna farther from the roof edge. Also note that the antenna should not be mounted closer than two feet from the front of the coach.
  - *Note: Be sure that the antenna has enough room to rotate properly.*
  - *Note: Before drilling through the roof and ceiling, be sure that you are not drilling too close to an overhead cabinet or you will not be able to turn the handle.*
- Most installs will require cutting the elevating shaft and directional handle. In steps 4 & 5 we see that the first step is to place the antenna in the hole. Next, go inside the RV and measure from the ceiling down 1 ½ in. and mark the shaft. Trim the shaft on this mark.
- After trimming the elevation shaft, insert the directional handle through the bottom of the ceiling until it is held snug in place (the directional handle is keyed and will only insert one direction.) The distance between the ceiling and the directional handle grip is the amount that needs to be cut.
  - *Note: For roofs more than 4 ¾ inches thick, you will need an extension kit part # EK-1036. Never cut the extension. All cutting must be done on directional handle itself.*
- Next, as seen in steps 6 thru 10, we will assemble the antenna, seal it to the roof and complete interior installation. If you refer to Figure 7 we recommend adding a light application of silicone to the coax connection before pushing the boot on. Make sure any coax connectors used on the roof are weather proof and always tighten them ¼ turn past tight. Over-tightening can damage the O-ring inside and cause leaks. Before screwing down antenna base, make sure it is centered in the hole to avoid directional handle rub or drag.
- You will find the instructions for correctly wiring the Sensar antenna power supply in steps 11 thru 15. A good power source is essential to avoid noise on the circuit. Therefore the best source of power is directly from the battery. The power supply wall plate is a short detector and is both self-protected and resetable. If the light on this unit goes out when a coax is attached, check the coax for a short.

- *Note: The amplifier for the Sensor head is located inside the sealed plastic head.*
- *Note: Winegard offers more than one level of amplification in the Sensor line, so similar looking units may perform differently.*
- *Note: The power supply wall plate switch will not pass LNBF voltage (on or off) so if the Park cable input is being used for a portable satellite, the wall plate must be bypassed or it will not work. You can use an A-B switch here, but it must be a “make before break” style switch.*

## Maintenance:

*Note: For lubrication purposes, use a silicone based lubricant. Do not use a solvent such as WD-40 as this will dissolve the seal which protects the interior of the coach from water leakage.*

- For satisfactory operation of the Sensor antenna, the unit needs to be lubricated every six months or when the antenna becomes difficult to elevate or rotate. This can be done by raising the antenna to a 45 degree angle and flooding the gears with lubricant. Also be sure to lubricate around the base of the turret assembly and inside the plastic cap on the turret assembly.

## Steps for Troubleshooting:

- **Step 1:** Turn the wall plate switch (booster) “on” and verify the light is on (it could be red or green depending on the model.)
- **Step 2:** Go on the roof and disconnect the coax cable from the antenna head. Inspect for corrosion.
- **Step 3:** With a DC Voltmeter or 12 volt test light, measure the voltage on the coax cable. Put the ground lead (black) on the outside of the connector and the positive lead on the center conductor of the coax. It should measure approximately 12 volts DC.
- **Step 4:** If you have voltage at the antenna head, this indicates the wall plate switch is working properly and the coax cables are OK. The problem is potentially that the amplifier inside the head is defective. This can be tested by placing a new antenna head on top of the old unit and hooking up the coax. If reception is restored, then the amplifier is bad. The antenna head has been ultrasonically sealed to keep it from coming apart while driving. If this weld is broken, Winegard cannot be liable for any damage that could result.
- **Step 5:** If you do not have 12 volts DC at the antenna head, then you need to measure it at the back of the wall plate switch.
- **Step 6:** Remove the wall plate switch from the wall and disconnect the coax cable that runs to the antenna. This is the connector that is on the right hand side if you are looking from the back with the coax jacks pointing up.

- **Step 7:** With the switch still on, measure the voltage at this jack. It should be approximately 12 volts DC.  
*Note:* Do not insert the probe of your meter or test lamp into the coax jack. Instead put a small diameter wire or an unfolded paper clip into the jack. The large diameter probe will permanently damage the connector. Put the ground (black) lead on the outside of the jack and the positive (red) one on the wire or paper clip that you inserted previously.
- **Step 8:** If you have any voltage at this point, the problem is in the coax cable between this point and the antenna head. The most likely place will be the at the coax connection under the base plate on the roof. To access this connection, pull the boot back from the boot collar on the base plate and pull on the coax cable until the connectors are accessible. Inspect these connectors for corrosion and replace if needed.
- **Step 9:** If you don't have voltage on the coax jack on the back of the wall plate switch and the light is on, the wall plate switch is defective and needs to be replaced.

## Other hints and tips:

- Before breaking the seal on the base plate boot, substitute a known good piece of coax cable between the head and the wall plate switch by running it through a door or window to verify where the problem is occurring.
- If the wall plate has a red light on it, check the back of the front coax connection to see if the pin is bent over and shorting out the connector. This is the one with the small black wire soldered to it. It should extend straight back.
- If you have voltages where they are supposed to be and the light is not lit, it is possible the light is burnt out.
- If the light comes on and then goes out after a few seconds, there may be a short in the coax or the antenna head. To determine which, first disconnect the coax from the head and check the light. If it stays on, the head is shorted. If it still goes out, leave the head disconnected, then disconnect the coax cable from the back of the wall plate switch and recheck the light. If it now stays on, there is a short in the coax cable.
- If the light comes on, but you have no power to the cigar plug receptacle, inspect the connection on the back of the cigar plug receptacle for melting. This is caused by using the plug for appliances other than a TV set, or if the connector that was plugged into it was loose while being used.
- If you are receiving the VHF channels (2-13) and not the UHF channels (14-82), then make sure the TV set has been set to "Antenna" and not "Cable" in the set-up menu for the TV set. Note: The terminology will vary from set to set.
- To determine if there is a problem with the coax from the wall plate switch to the television set, substitute a known good piece of coax cable from the front jack on the wall plate directly to the input jack on the TV set.
- To test the cable input jack on the outside of the RV, use the output signal from a VCR using a VHS cassette tape.

## Leak Testing Procedure:

- 1) Crank antenna up to 45 degree angle.
- 2) Remove all of the interior parts.
- 3) Slowly pour water over the gears and the gear housing.
- 4) Observe the inside of the RV to determine if the water is leaking in.
- 5) If the ceiling is getting wet, then the leak is around the base and needs to be sealed.
- 6) If the water is dripping from the hex shaft, then the “O” ring (dual quad ring) around the worm gear is leaking and needs to be replaced. If the water is dripping from anywhere else, it is not the dual quad ring.
- 7) If the leak is from the dual quad ring, replace it with part #2240026. You should also replace the wavy washer (part # 2160052) and the flat washer (part # 2360032) at the same time.
- 8) When replacing the dual quad ring, be sure to remove the old one from the seat in the gear housing. If, after reassembling the worm gear and inserting it into the gear housing, the cranking mechanism is hard to turn, you probably did not remove the old dual quad ring.