

AMERITRON SDC-100 Screwdriver Antenna Controller with Counter



The SDC-100 was designed to give up/down control to tune most screwdriver type antennas. This unit is compact and ideal for mobile installation (H 2 ¾", W 4", D 1 ½"). It features a counter to count turns of the motor inside the antenna. The four-digit readout makes tuning easier by enabling you to return your antenna to a desired position. Your antenna must have a sensor installed in it for the readout to work. If your antenna does not already have a sensor installed, contact your antenna manufacturer or Ameritron.

Installation

The SDC-100 can be easily connected. For mobile installations, disconnect power at the battery, until installation is complete. Connect power to your SDC-100 using the red (+12Vdc) wire and the black (GND) wire. The red (+12) wire should be connected to your vehicle battery (or 12Vdc source) through an inline fuse (not included). Consult your antenna manual or manufacturer for an appropriate fuse value; normally a 5 to 10 Amp slow blow will work. Connect the black (GND) wire to your vehicle (or station) ground.

The remaining four wires connect to your screwdriver antenna. Two for motor control, and two for the motor sensor. You will need to splice wires onto each of these four wires, so that they will reach your screwdriver antenna. Use quality insulated wire for these extensions. The motor

control wires (green and yellow) should be

no smaller than 18 AWG, and the sensor wires (brown and white) should be no smaller than 24 AWG. Take care and follow your antenna manufacturer's suggestions about routing these wires for a mobile installation. Avoid routing control wires with the feed line. Make sure a RF choke is placed around the control lines at the antenna. Connect the motor control wires and sensor wires to the antenna. There is no polarity on the brown and white sensor wires. If the motor travels in the wrong direction, switch the polarity of the green and yellow motor control wires. This control unit is designed to operate with a screwdriver antenna that operates on 12 volts. Many antennas operate on only 3 or 4 volts, a Dropping Resistor is used inline with the motor control line to bring the voltage down. Consult your antenna manual or manufacturer for the operating voltage. See the section **Dropping Resistor** for more details.

WARNING: The SDC-100 is designed for screwdriver antennas that operate on 12 volts. Many antennas operate on only 3 or 4 volts, a Dropping Resistor is used inline with the motor control line to bring the voltage down. Consult your antenna manual or manufacturer for the operating voltage. A mismatched voltage could severely harm your antenna. See the section Dropping Resistor for details.

Calibration and Operation

The SDC-100 will need to be calibrated to your antenna. First, turn ON the power to the SDC-100 and press the motor control rocker switch DOWN until your antenna is fully collapsed. Then switch OFF the power to the SDC-100. Next, press DOWN on the motor control switch WHILE switching ON the power to the SDC-100. The display will then read zero. The up/down switch may now be used to tune your antenna to resonance on the desired operating frequency. Consult your transceiver/antenna manual or manufacturer for more operating and tuning procedures. Typically an SWR of 1.5 or less is acceptable.

Due to the nature of some screwdriver antennas they will coast a few turns after power has been removed.

This coasting can be observed on the display. Allow a coast time of one or two seconds before switching directions. Avoid rapidly switching directions of the antenna. Rapidly switching directions will uncalibrate the counter on the SDC-100. If the counter does not read zero when the antenna is fully collapsed, the counter will need to be recalibrated as described above. Recalibration should be done periodically due to vibrations in a mobile environment.

The counter on the SDC-100 is an aid to help you quickly tune your antenna. Fine-tuning will be necessary. Use the counter to bring your antenna back to a certain portion of a band.

Dropping Resistor

The SDC-100 is designed to work with screwdriver antennas that operate with 12 Vdc. Many antennas operate on only 3 or 4 volts, a Dropping Resistor is used inline with the motor control line to bring the voltage down. Consult your antenna manual or manufacturer for the operating voltage of your antenna. If a dropping resistor is necessary, a good value to try is 5 Ω /10 Watts. This resistor will need to be placed inline on one of the motor control lines anywhere in between the SDC-100 and the antenna. If you are not sure whether or not this resistor is necessary for your antenna, try it and inspect the torque and speed of the motor. If the motor is too slow, reduce or eliminate the resistance. Use of 12 volts with a 3 or 4 volt antenna will result in failure of the motor.

Technical Assistance

If you have any problems with this unit, please read the manual again. If this manual does not reference your problem or reading the manual does not solve your problem, you may call *Ameritron* at **662-323-8211**.

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LIMITED WARRANTY

Ameritron warrants to the original purchaser that this product shall be free from defects in material or

workmanship for one year from the date of original purchase.

During the warranty period, Ameritron (or an authorized Ameritron service facility) will provide free of charge both parts and labor necessary to correct defects in material or workmanship.

To obtain such warranty service, the original purchaser must:

- 1) Complete and send in the Warranty Registration Card.
- 2) Notify Ameritron or its nearest authorized service facility, as soon as possible after discovery of a possible defect. of:
 - a) the model number and serial number, if any
 - b) the identity of the seller and the approximate date of purchase:
 - c) a detailed description of the problem including details on the equipment.
- 3) Deliver the product to the Ameritron or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and with shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore, carefully read the Instruction Manual. This warranty does not apply to am defect that Ameritron determines is due to:

- 1) Improper maintenance or repair. including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
- 2) Misuse, abuse, neglect or improper installation.
- 3) Accidental or intentional damage.

All implied warranties, if any, terminate one (1) year from the date of the original purchase.

The foregoing constitutes Ameritron's entire obligation with respect to this product, and the original purchaser and any user or owner shall have no remedy and no claim for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damage. so the above limitation and exclusion may not apply to you.

This warranty gives specific legal rights and you may also have other rights, which vary from state to state.