

AMERITRON SDC-100B Screwdriver Antenna Controller With Counter

The SDC-100B 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 1½"). 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 (A) Controllers that have six wires..

The SDC-100B can be easily connected. For mobile installations, disconnect power at the battery, until installation is complete. Connect power to your SDC-100B 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 manufacturers 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.

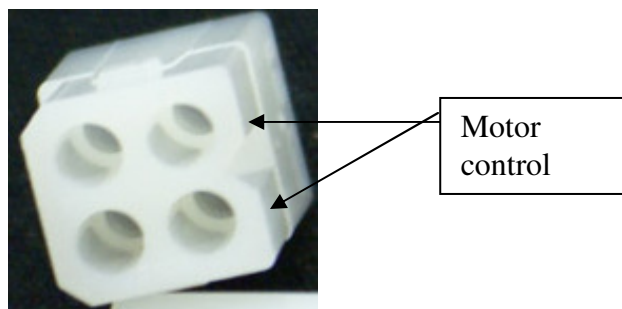
Installation (B) Controllers that have the 4 pin Molex plug.

1. The red wire needs to be fused and connected to the vehicle's +12 VDC supply. The size of the fuse depends upon the current requirement of the antenna motor. Typically a 5 Amp slow-blow fuse will work. Some installations may require additional wire. Use 16 AWG wire to add additional length.

2. The black wire needs to be connected to the vehicle (station) ground.

If the supplied red and black wires are not long enough, Use 16 AWG wire to add additional length.

3. Connect the 4 pin Molex to the antenna.



**Antennas that do not have a 4 pin plug.
The plug can be cut off. Use the chart
below for wire color and its function.**

CONTROL CABLE

RED	MOTOR WIRE
BLACK	MOTOR WIRE
GREEN	SENSOR
WHITE	SENSOR

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-100B 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-100B will need to be calibrated to your antenna. First, turn ON the power to the SDC-100B and press the motor control rocker switch DOWN until your antenna is fully collapsed. Then switch OFF the power to the SDC-100B. Next, press DOWN on the motor control switch **WHILE** switching ON the power to the SDC-100B. 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.

Setup Menu Flow

Hold *Menu button* + Power On → Trip Current (C)
→ Relay Delay (d) → Set UP → Normal Operation

After entering setup, the setting and the value are displayed. Pressing Up or Down changes the value.

. After the end is reached the last value is saved and the controller continues with normal operation.

Trip Current

This is shown in the menu with a “C” in the left-most digit. The other 3 digits will display the currently selected value. The trip current value is used to determine when the motor has stalled and immediately shuts the motor off. This feature protects the motor from damage if the antenna becomes stalled. The current is displayed as Cxxx, which translates into x.xx amps. The default setting is C075 or 0.75 amps. This is also the setting for use with the Ameritron SDA-100 Screwdriver Antenna.

Relay Delay

This setting controls the amount of time the relays are reversed when the motor is stopped. When the motor is

stopped, the relay that was moving the motor is deactivated and the opposite relay is activated for the duration set in the menu. The default setting is 20ms. The values range from 0ms – 200ms.

UP

This determines which button will move the antenna up. This can also be used to move the antenna correctly if the motor terminals are reversed. When UP is on the display, press the corresponding button (*Up* or *Down*), which moves the antenna up. This is then saved to memory. Pressing any other key will not make any changes and simply exit setup. Since this is the last setting in the setup menu. The controller will proceed with normal operation.

Consult your transceiver/antenna manual or manufacturer for more operating and tuning procedures. Typically an SWR of 1.5 or less is acceptable. The counter on the SDC-100B 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-100B 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-100B 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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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.

To obtain such warranty service, the original purchaser must:

- 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 any defect that Ameritron determines is due to:

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

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

