



Antenna Disconnect Actuator

DCA1 DCA2

***THE INEXPENSIVE WAY TO PROTECT YOUR VALUABLE RADIO
FROM LIGHTNING SURGES***

Operating Manual

rev. 2, February 2019

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General

The **Antenna Disconnect Actuator** is the inexpensive way to save your radio from damage from lightning and static surges.

The **Actuator** automatically disconnects the (HF + 6M) antenna from your radio and grounds the antenna. It prevents voltage surges from static-discharges and lightning strikes from damaging your radio and associated equipment. The **Actuator** is installed at the output from your transceiver, power amplifier, or antenna tuner in line with the antenna's feedline. Power for the **Actuator** comes from the transceiver or the power supply.

When the transceiver is turned OFF, the antenna's coax signal and shield are shorted together and grounded, and are totally disconnected from the radio. When the transceiver is powered ON, the **Actuator** re-connects the antenna's coax for normal operating. Note that the Actuator also contains a gas discharge tube (GDT) for reasonable lightning surge protection while operating.

Installation

Antenna Disconnect Actuator

The **Actuator** is placed at the output of the transceiver, amplifier, or the antenna tuner. The **Actuator** requires a connection to an effective earth ground via its ¼-inch stud. The device may be placed close to the radio, outside the radio shack, or near or on the antenna or tower. Note that the **Actuator** is in a water-proof enclosure.

Grounding is extremely important. For effective operation, the Antenna Disconnect requires a direct conduction path to earth ground. Use a number 10

wire, or heavy braided strap. Connect to a copper pipe that is driven a few feet into the earth, the deeper, the better.

Connecting to the transceiver's ground strap system at the radio is incorrect because it will obviate the "coax-unplug" feature of the Disconnect unit.

The Antenna Disconnect Actuator requires 10 to 18 volts to switch the relays. There are two connection methods to apply this voltage when powering up your station for operating:

1. For radios that have an accessory 12 volt jack, just plug in the wire from the **Actuator** (Figure 1A). When the radio is turned ON, 12 volts appears on this jack, and the actuator is switched ON. Most radios use an RCA-phonograph plug. If you need another connector, wire the RED lead to plus, and the BLACK to common.
2. For radios that do not have an accessory 12 volt jack, you can connect the **Actuator's** wire to the power supply. The red lead is plus 13.8 volts and the black lead is common (Figure 1B). Then when you turn ON the power supply, the **Actuator** connects the antenna for transmitting.

Note that the current required for switching is 60 mA.

If you need to extend the power lead, use the barrel connectors to crimp on the wire extension. Also install the Powerpoles for use with some power strips.

Operating the Antenna Disconnect

The **Antenna Disconnect Actuator** is in the protection mode whenever the Radio's power is OFF; the antenna's coax is disconnected shorted to ground. When the radio is powered ON, the antenna is reconnected and the green LED is illuminated.

If you are using the radio's 12 volt accessory output to drive the **Actuator**, simply unplug the connector while listening to a station. Just observe that the station went silent (or very low). This confirms that the antenna properly disconnects.

If the **Actuator** is powered from the radio's dc power supply, you must unplug the power wire to hear the station go from loud to soft. This confirms performance.

Because the **Actuator** is in series with your antenna, it is very important that you see the green LED light up when you turn ON the radio. Also listen to the radio to confirm that the antenna is connected.

The DCA1 model allows one transceiver to be attached to one coaxial feedline on the output. The DCA2 model allows two transceivers to be attached to two feedlines, but no switching is provided internally. Radio A can only be connected to antenna A, radio B can only be connected to antenna B.

IMPORTANT:

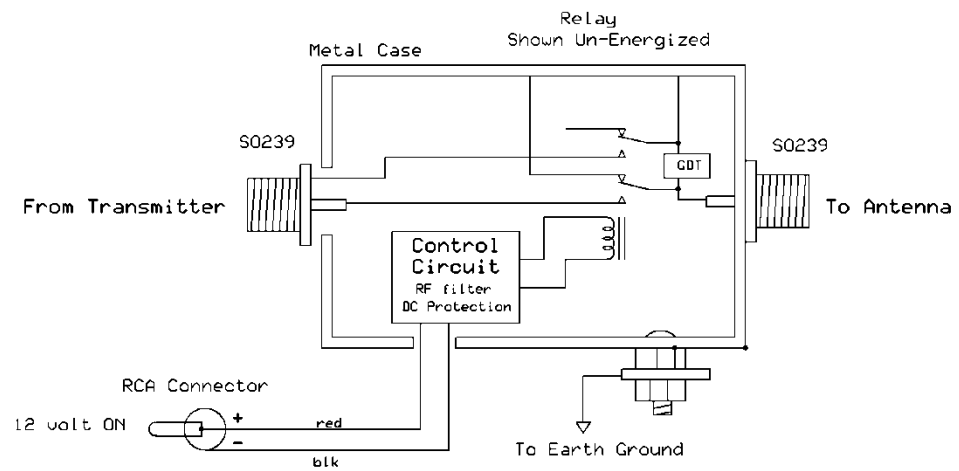
It is very important to check the SWR initially before operating. Adding a coax link can modify the SWR of the antenna system. Re-adjust your tuner if needed.

Specifications:

Actuator:

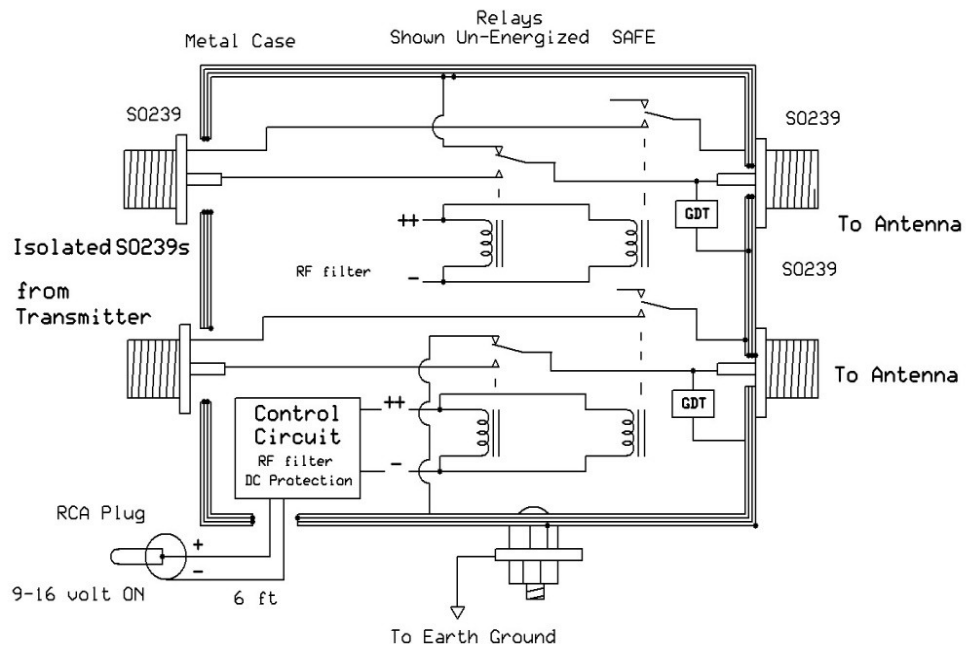
1. Operating Voltage: 10-18 Volts dc
2. Current: 120 mA when turned ON to connect antenna
3. Insertion Loss: <0.05 dB @ 29 MHz, <0.3 dB @ 54 MHz
4. Power Handling: 1.5 kW DCA1. 1.5 kW per side DCA2.
5. LED: Illuminates green when relays connect the antenna
6. Relays: Two relays with 15 Amp contacts, protected for reverse spikes
7. Case: Grounded to the **antenna's** coax connector
Isolated from the **radio's** coaxial connector but then connects to the **radio's** coaxial connector ground when actuated
8. Control Wire: Two-conductor AWG 18 with RCA phono plug
This wire may be lengthened: RED wire goes to center pin, BLACK wire goes to shell on the RCA plug
9. Control Input: Diode protected against reverse polarity. RF filtered.
10. Active Lightning Protection: Gas Discharge Tube on antenna coax inputs
11. Case Ground Stud: One-quarter inch with washers, lock washer and nut
12. Case: Die-cast aluminum, black powder coat, white print, water resistant
13. Size: DCA1 4.8 x 2.6 x 1.6 in., mtg. tabs w/4 holes @ 5.25 and 1.5 in. centers. DCA2 5.5 x 3.5 x 2.5 in mtg. Tabs w/4 holes
14. Weight: DCA 1 13 oz., 360 grams , DCA2 2 lbs, 907 g.

Warranty: The Auto Antenna Disconnect Actuator is warranted against failure due to defects in workmanship or materials for one year after the purchase date. This does not cover damage by abuse or incorrect installation or use.



Antenna Disconnect Actuator
Operational Diagram

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