Mazda Power Antennas Prior To 1992

(Problem And Solution If Adding A New Radio)

Document# 999311

Mazda Power Antennas Require A (-) Negative Trigger From The Radio

You may have noticed that your power antenna raises when the radio is turned on, and lowers when the radio or car is turned off. In order for this to happen, power antenna must know when the radio is on and off. Auto makers and stereo manufacturers design vehicles so that the radio sends a electric signal to the power antenna in order to accomplish this. Every auto manufacturer uses a (+) positive electric signal from the radio to the power antenna, EXCEPT Mazda up to 1992. Mazda, instead, used a (-) negative electric signal to trigger the power antenna. When the radio turned on, the radio would send a (-) negative electric signal to the power antenna and the power antenna would raise. When the radio or the vehicle was turned off, the electric signal would stop and the power antenna would lower.

New replacement radios are usually equipped with a blue wire designed to send a low current (usually less than 1 amp) (+) 12 Volt continual signal to a power antenna. This is opposite of the Mazda power antenna requirement.

In order for a new replacement radio to activate a Mazda power antenna up to 1992, the (+) 12 Volt positive power antenna wire must be converted to a (-) negative or ground wire in order to make the Mazda power antenna work.

Use A Relay To Convert A (+) Positive 12 Volt Wire To A (-) Negative Wire

You will need 1 SPDT relay for this install.

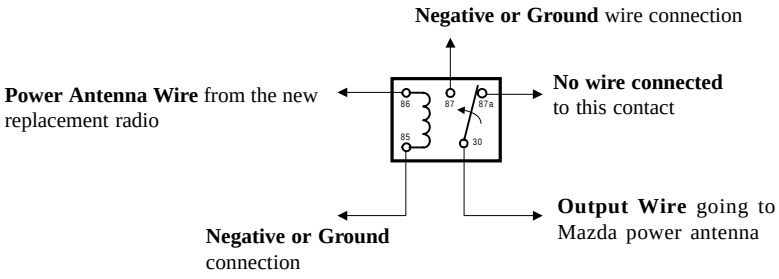
Convert A (+) Positive Voltage Wire To A (-) Negative Voltage Or Ground Wire

Application: To convert Mazda power antennas up to 1992 to work with new replacement radios
Understand: A (+)12 Volt wire connected to the inductor coil (85 or 86) will switch the relay to connect a (-) negative wire to the output contact (from 87 to 30)

Relay Contact Connections

30: (-) Output from relay to Mazda power antenna
87: (-) Negative or ground wire connected to relay
86: Power antenna wire from new replacement radio
85: (-) Negative or ground wire

For best results and quicker installation, use the same (-) negative or ground wire for both 85 and 87

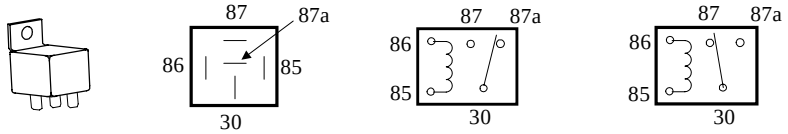


When the radio turns on, the (+) 12 Volt power antenna wire will turn on the relay, moving the contact arm from pin 87a to the (-) negative ground wire attached to pin 87 which is also in contact with pin 30 which is connected to the Mazda power antenna.

For additional information on similar topics, please consult the following technical documents:

999403 Relays, The Basics Of (How They Work)
999404 Relays, Applications For (One Of An Installers Most Powerful Installation Devices)
999003 Radio Install Basics (How Aftermarket Radios Integrate Into Electronics Of Vehicles)
999310 Power Antennas - What You Need To Know Before Replacing Or Adding

SPDT Automotive Relays



3D View | **Bottom View** | **Schematic View (off)** | **Schematic View (on)**