

Description

You will never have to turn on or off your radio(s) again. The voltage sensing APO3 automatic switch is designed for 12 volt vehicle electrical systems with negative ground. It can switch up to 20 amps and carry up to 30 amp loads. The shutdown voltage can be set to one of four pre-programmed voltages (11.8, 12.1, 12.7, 13.05 volts) using two DIP switches and the shutdown delay can be set to one of four pre-programmed times (0, 5, 10, 20 minutes). The device is housed in a sturdy ABS plastic case.

What it Does and How it Works

The APO3 is basically a voltage controlled switch. When the vehicle voltage is higher than the APO3 set point, the relay is turned on and power is provided to the load side. When the voltage drops below the APO3 voltage set point *and stays there for longer than the time set point*, the APO3 relay turns off and power is removed from the load side.

The APO3 has a bright yellow LED to indicate its status and it has a slide switch that can be used to turn the load on regardless of the input voltage.

Using the factory default settings, the APO3 will turn on the load when the vehicle voltage rises above 13.05 volts. This typically occurs within a few seconds of starting the vehicle. The load remains powered as long as the vehicle is on. When the engine is shut off, the vehicle voltage sinks below 13.05. The APO3 waits until the voltage has been less than 13.05 volts for 10 minutes and then turns the load off.

The APO3 is *ideal* for use with mobile APRS stations. It allows the radio to transmit a few position reports after the vehicle is shut off before turning off the radio and GPS to reduce clutter on the APRS channel and prevent the vehicle battery from discharging.

Installation

The APO3 is installed between the vehicle battery and the DC load. Typically, the load is a amateur radio mobile transceiver and accessories. Standard installation involves installing the APO3 in the DC feed to the radio. APO3 is offered with Powerpole ends, OEM-T (Male and Female connectors) and BARE ends for custom installation of the APO3. This usually takes 10 minutes or less. If you want to change the factory set points, then you will need to remove the cover and flip a couple of small switches.

Switch Settings

The voltage threshold and the shutdown delay are configurable with DIP switches. The switch settings are shown below and are also printed on the bottom of the circuit board.

| Voltage Threshold | | | Shutdown Delay | | |
|-------------------|-------|-----------------|----------------|-------|--------------|
| SW1.1 | SW1.2 | Volts | SW1.3 | SW1.4 | Minutes |
| Off | Off | 11.8 | Off | Off | 0 |
| Off | On | 12.1 | Off | On | 5 |
| On | Off | 12.7 | On | Off | 10 (Default) |
| On | On | 13.05 (Default) | On | On | 20 |

APO3 Voltage vs. Time

