

“Ball Park” Voltage Drop Standards

A “ball park” value is useful as a starting point when testing for voltage drop. It is based on where the testing begins, and also on whether the load being tested is “low current” or “high current”. Low current loads are not controlled by a relay, and high current loads are relay controlled. Low current loads include any fuse terminal fed voltage, ignition switch, headlamp switch, and windshield wiper motor. High current loads include the rear window defogger, and power seats.

These “ball park” standards are based on the *Engine Running*.

Voltage Feed Side

Low current non-relay controlled loads:

No more than 1/2Volt drop between the battery positive (+) terminal and the input to any load.

No more than 100mV drop between the battery negative (-) terminal and the output pin from any load.

High current relay controlled loads:

No more than a 1 1/2Volt drop between the battery positive (+) terminal and the input to any load.

No more than a 100mV drop between the battery negative (-) terminal and the output pin from any load.

Ground Side

Low or high current loads:

No more than .100Volt (100mV) drop from the output terminal or case ground to the battery negative (-) terminal.

Generally, voltage drops should not exceed the following:

200millivolts for a wire or cable.

300millivolts for a switch.

100millivolts for a ground.

less than 50millivolts for any sensor connection.

Less than 50millivolts for any computer or control module ground.

zero millivolts for a connection between wire and its metal connector

The more conducting material, connections and contacts between the battery and the load, the higher the voltage drop. Since the ground path is usually a short piece of wire, or a case ground connected to the frame or sheet metal, the acceptable voltage drop on the groundside is always lower than the feed side.

www.Vestest.com The Vehicle Voltage Drop Website