cerrowire® Voltage Drop Table

- **Voltage drop** becomes important when the length of a run of wire or cable becomes very long. Usually this is not a problem in circuits within a house, but may become an issue when running wire to an outbuilding, well pump, etc.

- **Excessive voltage drop** can cause loss of efficiency in operation of light, motors and appliances. This could result in lights that are dim and motors or appliances with a shortened life.

- **To avoid excessive voltage drop,** select a size wire that will minimize voltage drop. You need to know the length of the wire run and the load (current) that will be on the circuit. To determine the load, add up the wattage of all electrical devices that will be on the circuit and divide this total by the voltage of the circuit, usually 120 volts or 240.

120 Volt (AWG or kcmil) Single Phase, Max 3% Voltage Drop*

Length of Run:	25 ft	50 ft	100 ft	150 ft	200 ft	Amp Load
Copper	14	12	10	8	6	15 AMP**
Copper	12	12	8	6	4	20 AMP**
Copper	10	10	6	4	4	30 AMP**
Copper	1	1	1	2/0	4/0	100 AMP**
Aluminum	1/0	1/0	2/0	4/0	300 MCM	100 AMP**
Copper	3/0	3/0	3/0	300 MCM	500 MCM	200 AMP***
Aluminum	250 MCM	250 MCM	300 MCM	600 MCM	900 MCM	200 AMP***

240 Volt (AWG or kcmil) Single Phase, Max 3% Voltage Drop*

Length of Run:	25 ft	50 ft	100 ft	150 ft	200 ft	Amp Load
Copper	14	14	12	10	10	15 AMP**
Copper	12	12	10	10	8	20 AMP**
Copper	10	10	10	8	6	30 AMP**
Aluminum	8	8	8	6	4	30 AMP**
Copper	8	8	8	6	4	40 AMP***
Aluminum	6	6	6	4	3	40 AMP***
Copper	6	6	6	6	4	50 AMP**
Aluminum	4	4	4	4	2	40 AMP***

* The tables assume steel conduit, a power factor of 0.9, an ambient temperature of 86°F, and no more than 3 current-carrying conductors. We have taken reasonable care to establish the accuracy of these values; however, this tool is intended only as a guide, consult a professional engineer to determine suitability for your application.
** Based on 60°C per NEC® 110.14(C)(1)(a)
*** Based on 75°C per NEC® 110.14(C)(1)(b).

cerrowire®
1099 Thompson Road SE · Hartselle, AL 35640
256.773.2522 · cerrowire.com