



Wire Colors and Code Requirements

Irrigation wires and cables are available in a multitude of sizes and colors. For the most part, a large amount of latitude is given by the National Electrical Code[®] (NEC[®])¹ with regard to colors. Only two colors are dictated by the NEC[®] for specific reasons:

1. Green wires are strictly reserved for the “equipment ground.” This is the wire that is connected to the bus bar and the ground rod at the service entrance (circuit breaker box) and to the chassis of the equipment (the load.) Its purpose is to conduct electricity only when a fault is created, at which time it completes a circuit to kick the circuit breaker, or blow a fuse.
2. A white wire can only be used as a “grounded conductor” (also known as the “neutral”.) This wire is part of the complete circuit that carries current to the load under normal operation conditions and it is connected to the bus bar and the ground rod at the service entrance.

There are no NEC[®] restrictions on the colors of other types of power-conducting wires that are not grounded. But there may be specific color requirements for these power wires by local electrical codes that date back to the days when the NEC[®] was more specific. For this reason, the designer/installer of irrigation systems should always consult with local authorities on specific requirements.

¹ National Electrical Code[®] and NEC[®] are registered trademarks of the National Fire Protection Association, Inc., Quincy, MA 02269, USA

Typical adopted color codes for power wires for 120-volt and 240-volt systems are shown in figures 1 and 2 below, respectively.

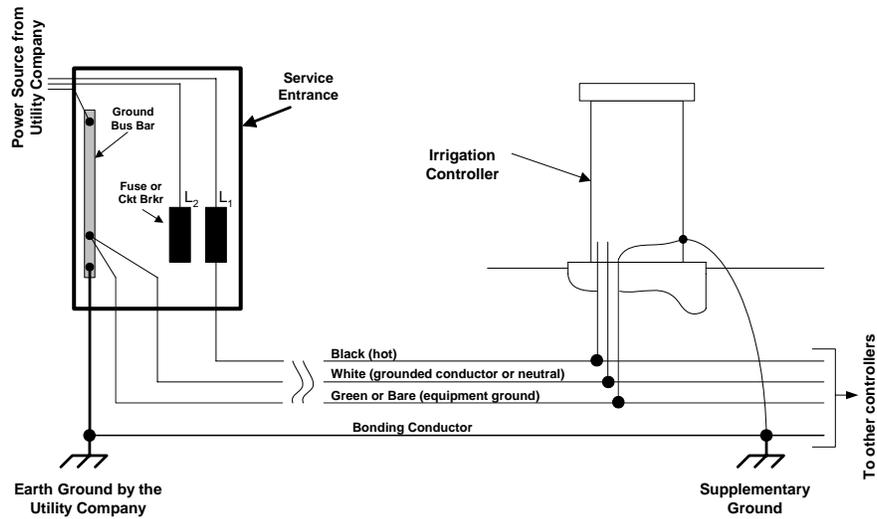


Figure 1 – Typical wire colors for 120VAC circuits

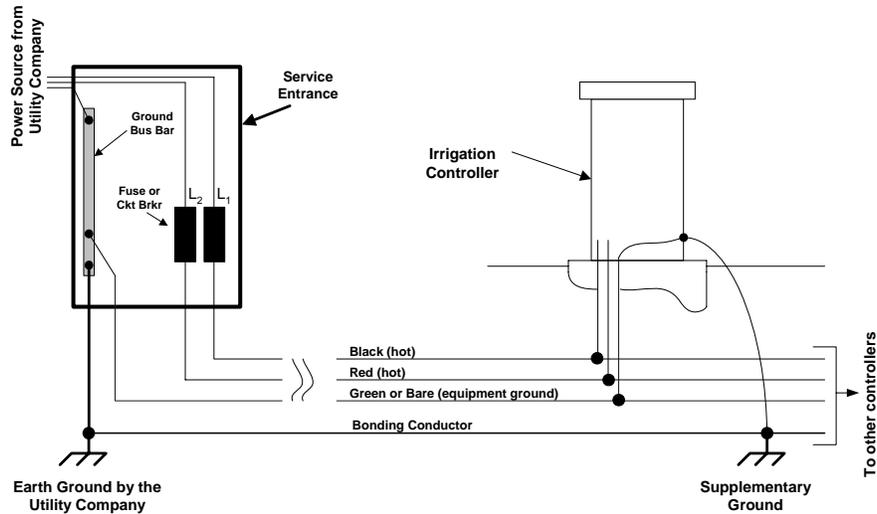


Figure 2 – Typical wire colors for 240VAC circuits

It is important to note that it may be necessary to use “color coding tape” to identify single conductor wires within multi-conductor cables to the requirements of the electrical codes. Changing colors of white and green wires, by any means, is strictly forbidden by the NEC[®]. When color coding wires, it must be done to every section of wire/cable at every splice and every termination.