

ARTICLE 725

REMOTE-CONTROL, SIGNALING, AND POWER- LIMITED CIRCUITS

Introduction to Article 725—Remote-Control, Signaling, and Power-Limited Circuits

Circuits covered by Article 725 are remote-control, signaling, and power-limited circuits that are not an integral part of a device or appliance. This article includes circuits for burglar alarms, access control, sound, nurse call, intercoms, some computer networks, some lighting dimmer controls, and some low-voltage industrial controls.

Here is a quick look at the types of circuits:

- ▶ A remote-control circuit controls other circuits through a relay or solid-state device, such as a motion-activated security lighting circuit.
- ▶ A signaling circuit provides output that is a signal or indicator such as a buzzer, flashing light, or annunciator.
- ▶ A power-limited circuit is a circuit supplied by a transformer or other electric power source that limits the amount of power to provide safety from electrical shock and/or fire ignition.

The purpose of Article 725 is to allow for the fact that these circuits “are characterized by usage and power limitations that differentiate them from electrical power circuits” [725.1 Note]. This article provides alternative requirements for minimum conductor sizes, overcurrent protection, insulation requirements, wiring methods, and materials.

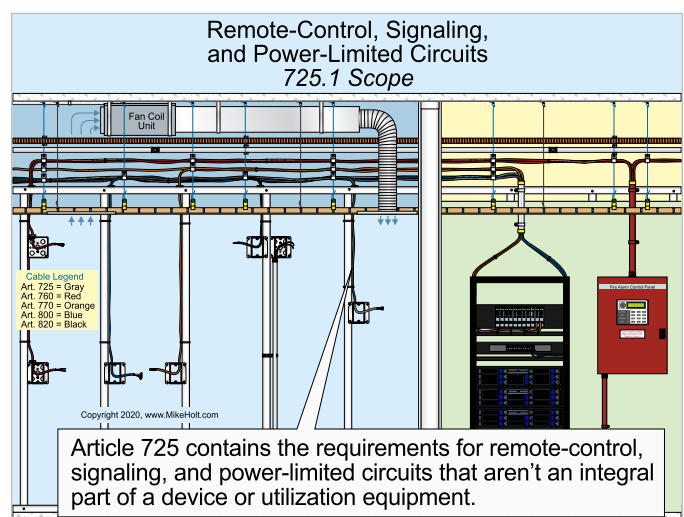
Article 725 consists of four parts. Part I provides general information, Part II pertains to Class 1 circuits, Part III addresses Class 2 circuits, and Part IV focuses on listing requirements. The key to understanding and applying each of these parts is in knowing the voltage and energy levels of the circuits, the wiring method involved, and the purpose(s) of the circuit.

Part I. General

725.1 Scope

Article 725 contains the requirements for remote-control, signaling, and power-limited circuits that are not an integral part of a device or utilization equipment. ▶Figure 725-1

Note: These circuits have electrical power and voltage limitations that differentiate them from electrical power circuits. Alternative requirements are given regarding minimum conductor sizes, overcurrent protection, insulation requirements, and wiring methods and materials.



▶Figure 725-1

Author's Comment:

- ▶ To understand when to apply the requirements of Article 725 for remote-control and signaling circuits, you must understand the following Article 100 Definitions:
 - ▶ **Remote-Control Circuit.** Any electrical circuit that controls another circuit through a relay or equivalent device is a remote-control circuit. An example is the 120V branch circuit that operates the coil of a motor starter or lighting contactor, or the 24V circuit for a garage door opener.
 - ▶ **Signaling Circuit.** Any electrical circuit that energizes signaling equipment is a signaling circuit. Examples include doorbells, buzzers, signal lights, annunciators, burglar alarms, and other detection indication or alarm devices.
 - ▶ **Class 1 Circuit.** The wiring system between the load side of a Class 1 circuit overcurrent protective device and the connected equipment. See 725.41 for the voltage and power limitations of Class 1 circuits.
 - ▶ **Class 2 Circuit.** The portion of the wiring system between the load side of a Class 2 power supply and the connected Class 2 equipment. Due to power the limitations of its power supply, a Class 2 circuit is considered safe from a fire initiation standpoint and provides acceptable electric shock protection.