

HomeWorks Installations and the National Electrical Code® (NEC®)

Overview

An integral feature of the *HomeWorks* lighting control system is to utilize wallmounted “smart” dimmers and switches which connect to the *HomeWorks* Processor via *NEC* Class 2 circuits. This leads to the potential to have both electric light and power conductors and Class 2 circuit conductors in the same wallbox. The 2002 *National Electrical Code* Article 725-55 addresses the installation of Class 2 circuit conductors in the same enclosure as electric light and power circuit conductors. Depending on the authorities having jurisdiction, a question can arise as to how to install these devices such that the *NEC* and any local electrical codes are satisfied. This Application Note provides direction in fulfilling these regulations, and references portions of the 2002 *NEC* regarding the presence of Class 2 and electric light and power conductors in the same enclosure.

Solution 1

The *HomeWorks Vareo*® and *HomeWorks Maestro*® family of products were designed such that the Class 2 circuit conductors from these devices could be routed outside of the wallbox. This design addresses the strictest *NEC* interpretation which does not allow both Class 2 and electric light and power circuit conductors within the same wallbox.

In this installation method, the Class 2 circuit conductors from the *HomeWorks* Dimmer Interface are pulled over the top of the wallbox (Figure 1), rather than into it; and the Class 2 circuit conductors from the *HomeWorks Vareo* or *Maestro* controls are likewise fed over the top of the wallbox (Figure 2). This eliminates the presence of the Class 2 circuit conductors inside the wallbox. The *HomeWorks Vareo* and *Maestro* controls installation sheets call out this installation method.

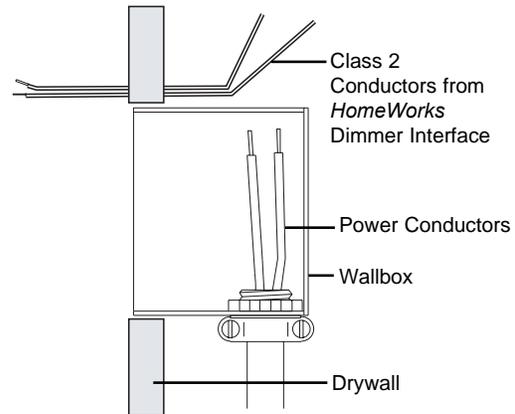


Figure 1

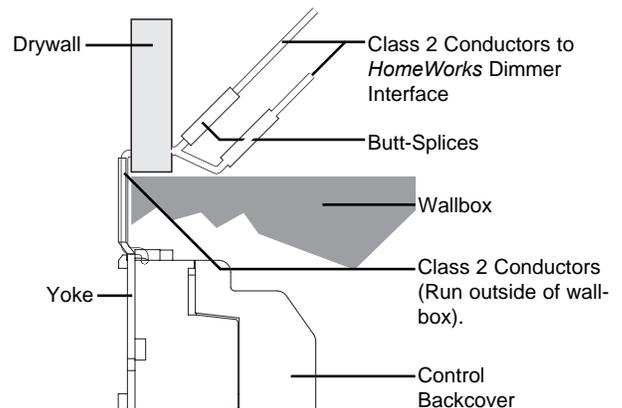


Figure 2

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Solution 2

The 2002 *NEC* Article 725-55 (D) provides the specific rules governing Class 2 conductors and electric light and power conductors within the same wallbox. It states that electric light and power conductors may be allowed in the same enclosure as Class 2 circuit conductors, provided they are both introduced for connection to the same equipment, and if one of the following requirements is also met:

- 1) The electric light and power conductors are routed to maintain a minimum of 1/4 inch (6.4 mm) of separation from the Class 2 circuit conductors, or:
- 2) The circuit conductors operate at 150 volts or less, and meet the following requirement:
 - a) Class 2 circuits are installed using types CL3, CL3R, CL3P or permitted substitute cables and the cable conductors extending beyond the jacket are separated by a minimum of 1/4 inch (6.35mm), or by a nonconductive sleeve/barrier, from all other conductors.

Understand Though...

The *NEC* is a document subject to interpretation. Your local city, county, municipality or state authorities have the final authority to approve or disapprove any installation. They must always be consulted for verification of the code, and the manner in which it will be applied, in your area, prior to installation.

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