

Overview

An integral feature of the HomeWorks System is the ability to utilize wallmounted “smart dimmers/ switches” or Master Keypads which connect to the HomeWorks Processor via Class 2 circuits. This leads to the potential to have both line and Class 2 circuit conductors in the same wallbox. The 1996 National Electrical Code (NEC)®, Article 725-54, addresses the installation of Class 2 circuit conductors in the same enclosure as electric light and power (line voltage) 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 1996 *NEC* regarding the presence of Class 2 and line voltage circuits in the same enclosure.

The Solution

The HomeWorks Vareo family of products was 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 Interface Panel are pulled over the top of the wallbox (Figure 1), rather than into it; and the Class 2 circuit conductors from the device 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 instruction sheets call out this installation method.

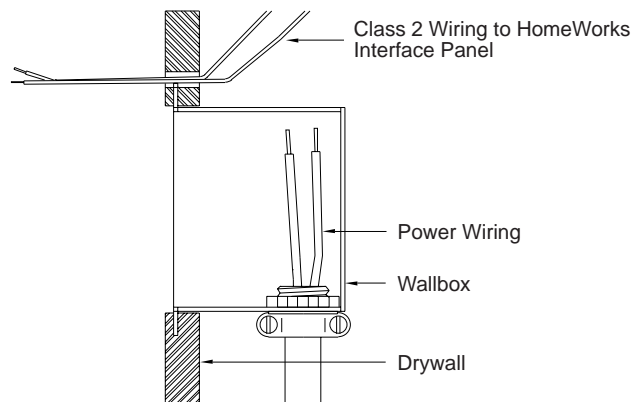


Figure 1

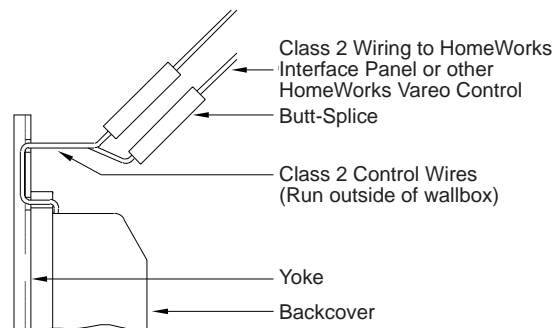


Figure 2

Alternatives

In certain instances, successful installation of a HomeWorks Vareo, a Master Keypad, or both in the same wallbox, may require running both electric light and power, and Class 2 circuit conductors inside the same wallbox. There are two exception classifications under *NEC* Article 725-54 regarding this application, which may be allowed by the authorities having jurisdiction. The exceptions are as follows:

Exception 1: States that both electric light/power conductors and Class 2 circuits may be allowed within the same enclosure provided they are installed with a barrier to separate them from each other.

Exception 2: 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:

- a) The electric light and power conductors are routed to maintain a minimum of .25 inches (6.35mm) of separation from the Class 2 circuit conductors, or:
- b) The conductors are 150 volts or less, and meet one of the following requirements:
 - 1) 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 .25 inch (6.35mm) separation, or by a nonconductive sleeve/barrier from all other conductors.
 - 2) The Class 2 conductors are installed as a Class 1 circuit in accordance with Article 725-21. (A common usage of this exception refers to Article 340-4(4) which states that tray cable (TC) may be permitted for use for Class 1 circuits as permitted by Article 725).

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 in your area prior to installation.

Worldwide Headquarters

Lutron Electronics Co., Inc.

7200 Suter Road

Coopersburg, PA 18036-1299 U.S.A.

PHONE: (610) 282-3800

FAX: (610) 282-3090

Patents pending. Lutron, HomeWorks and Vareo are registered trademarks and HomeWorks Vareo is a trademark of Lutron Electronics Co., Inc. National Electrical Code and NEC are registered trademarks of the National Fire Protection Association NFPA 70.
© 1997 Lutron Electronics Co., Inc.

**Need additional assistance? Call the Lutron Technical Assistance Hotline 1-800-523-9466
Please provide exact model number when calling.**

Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299 U.S.A.
Made and printed in U.S.A. 10/97 P/N 366-583 Rev. A