



## NEC 2020 Code Update for Control Circuit Conductor Color Application Note

### Background

The 2020 National Electrical Code (NEC) (NFPA-70) includes a provision for control circuit wires designed to promote safety during installation and retrofits. The new requirement prohibits the use of control circuits wire colors in field applications used for grounded branch circuits or equipment grounds. This means the use of white, gray, green, or green with a yellow stripe conductors will no longer be allowed for use as control wires that exit the luminaire for field installation. This provision becomes effective on January 1, 2022, and the details can be found in section 410.69.

While the update to the NEC code is clear, there are some additional points of note.

1. *State Requirements:* As of October, 2021 there are 14 states that have adopted the NEC 2020 revision ([Learn where the National Electrical Code® \(NEC®\) is enforced. | NFPA](#)). The balance of the states (including California) are currently evaluating to previous editions.
2. *Field Connected:* The requirement is intended to ensure safety in field applications. Therefore, it applies to wires that are designed for field accessibility and does not cover wires that do not exit the luminaire.
3. *Re-identification:* One additional element to section 410.69 is an allowance to “permanently mark” wires that are visible and accessible. This could include paint, tape or other methods that effectively identify the wires and are compliant with the updates.



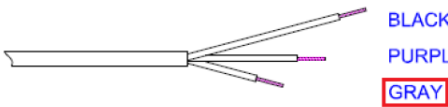
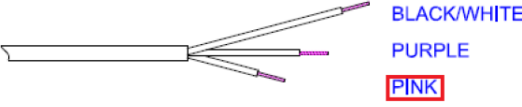
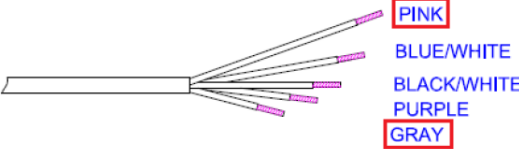
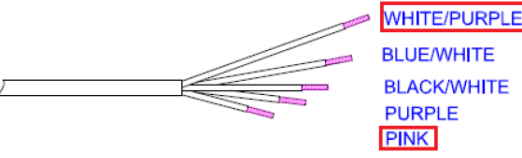
### Inventronics Support of the Standard

Inventronics supports our customers across the globe and strives to meet the various requirements of the local geographic markets served. To support the upcoming NEC 2020 requirements, Inventronics has implemented a change to North American focus products (including the UL Class P certified offerings). The change will be cut in over the coming months (under PCN 2021092901) with the different cable updates shown in the tables below.

Cable	Type	Before	After	Function
1	Fly leads	Gray	Pink	Dim-
2	Double Insulation (Three wires)	Black/White	Black/White	Vaux
		Purple	Purple	Dim+
		Gray	Pink	Dim-
3	Double Insulation (Five wires)	Pink	White/Purple	OTP+
		Blue/White	Blue/White	OTP-
		Black/White	Black/White	Vaux
		Purple	Purple	Dim+
		Gray	Pink	Dim-

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CABLE	Old Design	New Design
1	 <p>GRAY</p>	 <p>PINK</p>
2	 <p>BLACK/WHITE PURPLE GRAY</p>	 <p>BLACK/WHITE PURPLE PINK</p>
3	 <p>PINK BLUE/WHITE BLACK/WHITE PURPLE GRAY</p>	 <p>WHITE/PURPLE BLUE/WHITE BLACK/WHITE PURPLE PINK</p>

## **Conclusion**

The upcoming NEC 2020 changes will bring about change within the industry. In the near term, that is likely to lead to some questions as previously built products are exhausted from the supply chain and updated products enter the market. Inventronics will continue to introduce products that meet the latest local standards and has a technical, sales and customer service team prepared to support our customers.

For questions regarding NEC 2020 section 410.69 or any other questions please visit our website where there is a variety of tools and contact information <https://www.inventronics-co.com/>.