



Organize your control panel with wire duct

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Introduction

Need to get that panel organized? Wires going in multiple directions?

The purpose of wire duct is to easily and flexibly organize the wires in a control cabinet, breaking out the fingers and feeding the wires as desired. There are several terms in the industry for wire duct. It is also known as wireway, raceway, and even Panduit, a brand name (similar to how many people call a tissue a Kleenex). Regardless of what you call it, wire duct serves the same purpose.

When considering wire duct, there are many characteristics to keep in mind: material, color, sizing, types, features and benefits, length, pricing, and available accessories.

Material

Standard wire duct is typically manufactured with polyvinyl chloride (PVC) plastic due to its long lifespan. PVC maintains superior mechanical strength and high chemical resistance, even against oxygen and ozone effects. It is resistant to salt corrosion and most acids. Ideally, standard wire duct will be silicone-free and operate between 23°F to 140°F. Choosing a UL Recognized wire duct with a UL 94 flame class of V0 offers peace of mind.

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Many locations, however, will require halogen-free wire duct. This type of wire duct is made of polycarbonate/acrylonitrile butadiene styrene (PC/ABS) and is free from silicone and halogen, ideal for operating temperatures from -13°F to 194°F. The term halogen-free relates primarily to the elements chlorine and bromine in flame-protection agents. To be classified as halogen-free, the material must consist of less than 900 parts per million of these elements and have less than 1,500 ppm of total halogens. The term “total halogens” refers to chlorine, fluorine, bromine, iodine, and astatine elements, commonly used in the production of plastics and Teflon.

Halogen-free plastics were established due to the dangers of gases released when these elements catch fire or are heated to high temperatures. Halogen-free is preferred, and in some cases required, in areas with a lot of foot traffic, such as hospitals, airports, buses, and train stations. It is also UL recognized with a UL94 flame class of V0. Halogen-free wire duct is available in light gray or blue.

Width and color

The two most common types of wire duct are thick finger and narrow finger. Which one you choose will depend on the number of wires you are organizing, as well as your personal preference. Phoenix Contact carries narrow finger wire duct. The slot distance, or distance between each finger, is 6.5 mm with a slot width of 6 mm.

Wire duct commonly comes in different colors, such as standard gray, white, blue, halogen-free light gray, and halogen-free blue. In the food and beverage industry, blue is the preferred color for non-edible components. The number of blue foods is minimal, so it is the desired color for components in and around production. If a finger or other piece of wire duct gets lost on the production line, the blue color makes it easy to spot.

Simplifying installation

Ideally, wire duct should feature easy installation and removal of the cover on the channel. The base fingers feature wide, angled heads to ensure easy assembly and a secure hold of

the cover. Scored fingers allow for tool-free snap-off leaving a clean, non-abrasive edge. Some manufacturers offer both the wire duct channel and cover under one part number. This reduces the number of inventoried part numbers. While additional covers might be purchased separately because they often get misplaced, it is not necessary to order two part numbers to get pieces required to organize the cabinet.

Pricing considerations

When choosing a wire duct, the length and pricing need to be considered. Some manufacturers sell their wire duct in six-foot lengths, while others sell it in two-meter lengths. In addition, some distributors price the wire duct per foot, whereas others price it per stick. Lastly, many manufacturers sell the wire duct channel and cover separately. This must also be calculated into the total price.

For example, Phoenix Contact’s wire duct is priced in two-meter lengths and includes both the channel and cover. When comparing it to another wire duct, it may require some calculation. For example, comparing it to a six-foot

Specifying the right Phoenix Contact wire duct for your specific needs

Phoenix Contact offers 27 different sizes, width and height, all two meters in length. The sizes range from 25x25mm (1”x1”) to 120x80mm (5”x3”). The first number indicates the width, and the second is the height with the cover. For example, a 25x40 piece is 25 mm wide and 40 mm high when the cover is in place. The size of the wire duct is noted in the description. For example, CD 25x40. CD is short for cable duct.

The channel of the wire ducts is perforated with the first hole being 8 mm long, followed by a hole that is 14 mm long and then repeated. Both holes are 4.5 mm wide. From the center of the first hole to the center of the second hole measures 25 millimeters.

piece priced per foot and cover sold separately would calculate as follows:

- Manufacturer A: 6 x per foot price = cost of a six-foot channel + cost of cover,
versus
- Phoenix Contact: priced per two meters (6.5 feet), cover included

Note in the case above, an additional half foot is received with the Phoenix Contact wire duct.

Accessories

The right accessories can assist with the installation, wire securement, and cutting of the wire duct. Plastic, body-bound rivets and setting tools are available in 4 mm and 6

mm diameters. Wire retaining clips securely hold wires in place by snapping onto bars on the sides of the duct. The hand-held cutter, featuring a 45° guide for clean-cut, angled corners, and the benchtop cutter can assist in cutting lengths to size, while leaving a burr-free, non-sharp edge.

Conclusion: high quality from a single source

In summary, if you need to organize your control panel and are considering using wire duct, there are many characteristics to consider: material, color, sizing, types, features and benefits, length, pricing, and available accessories.

For more information and to order samples, please visit www.phoenixcontact.com/wire

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