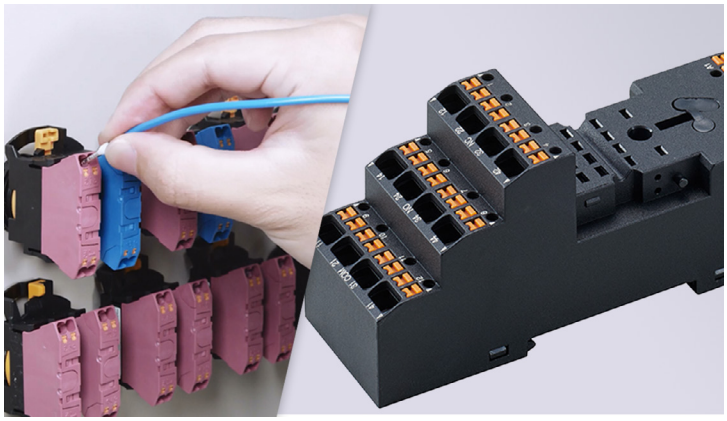
FAQs

Exploring the Benefits of Push-In Wiring Terminal Technology



Could you briefly explain how push-in wiring terminal technology works?

A uniquely designed infrastructure incorporates a spring steel arm mounted with a section of flat metal contact. When the exposed wire is pushed in, it is squeezed between those two pieces of metal, achieving reliable and secure electrical contact under steady pressure. The wire pushes against the spring steel, which allows it to slide past until it stops against the backplane of the chamber. With a slight tug on the wire, installers can be sure it is secured in place.

With the help of a flat head screwdriver, the plastic pusher pushes the spring steel away from the wire so that it can be removed easily and quickly. The pusher is plastic to prevent electric shock while removing wires. It also facilitates insertion of multi-strand and thin/flexible wires.

Why would I choose to use push-in technology instead of standard screw terminals?

The fact that recent societal issues have left many companies with a decreased workforce has only increased a company's interest in saving money and keeping employees safe. To facilitate these concerns, there has been a trend toward providing products that are quick and easy to connect, are safe regardless of employee experience, and still able to work with smart products that offer smaller footprints. Push-in technology meets these criteria very well by saving up to 55% of wiring time, reduced maintenance due to loosened screws, and component replacement time.

For example, making wire connections using screw terminals requires the use both hands. Push-in technology is a single-hand operation. The more products in an application that use push-in technology—such as switches, relay sockets, PLCs, etc.—the more time savings and reliability customer will benefit from. Employees providing installation do not have to be experienced, leaving more critical jobs for those who are.

What wire sizes can be used with push-in terminals?

Depending on the current requirements of the device itself, wire sizes can vary widely, most often between 16 and 26 AWG (0.14 to 1.50 mm2), with wire strip length of 10-11 mm. If your application is using stranded wires, adding a ferrule to your wire will make it easy to insert into the push-in terminal.

How many wires can be installed in one push-in terminal?

Similar to a screw terminal, which is typically capable of accommodating two wires, the design of the push-in terminal allows for two connections per terminal with one wire to be installed per connection.

Do I have to worry about connections coming loose during shipping or under vibration?

Because of the design of the device, users get safe and reliable connections with superior contact reliability, even in high-vibration applications of up to 55 Hz with an amplitude of 1 mm. The connections also handle high G shock very well. These capabilities are present regardless of the shape or size of the wire being used and whether the wire is solid core or stranded wire using a ferrule.

What other features do I need to consider before incorporating push-in technology devices?

To prevent incorrect wiring, the terminal number is located on the relay socket or switch contact block and can be clearly seen. So that a flat blade screwdriver does not get inserted into the wire port, the pusher has a distinct color. Marking plates can also be used on the device, making it easy to identify each connection, which will

greatly reduce installation and maintenance times. Finally, once the push-in terminal is properly wired, it is finger-safe, protecting against electric shock if touched.

Who might benefit most from using push-in technology?

Although anyone making connections, whether in the field or on the factory floor, will benefit from the use of push-in technology, several specific groups may see greater results. For example, contract manufacturers have a particular opportunity to save large amounts of time and money from using components with push-in connections. This includes panel builders who specialize in the design and installation of industrial-control modules and subsystems.

Further, control panels that necessitate the connection of many different devices that mount in or are installed on the equipment cabinet can be installed easily and quickly. Then there are OEMs, that will benefit from the way in which components featuring push-in connectivity streamline the setup of control cabinets—especially those employing many control devices in the equipment they sell. Distributors, as well, benefit from the ability to offer simplicity to end-users. Product managers and designers also benefit from the way in which push-in connectivity trims manufacturing and labor costs.

Are there differences between the variety of push-in terminals that I should know about?

In answering this question, we should clear up some confusion. Other types of push-in technology include what are called spring-clamp, spring-cage, or cage-clamp connections—all of which are similar in operation and need a screwdriver to open up the pathway for wire insertion, as well as to extract wires. Sometimes it is confusing to distinguish the wire insertion port from the screwdriver port. True push-in technology, like the IDEC terminals are more compact than competitor products, which allows for building solutions with smaller footprints. Further, their terminals include small orange pushers near each wire terminal port to make it easier to identify, which in turn makes connection even more intuitive and faster—important when rewiring systems.