

FAQ

Why Should You Incorporate Push-In Terminals in Your Next DIN Rail Application?

Interfacing different pieces of equipment in today's automation products means that design engineers must select terminal blocks that are more versatile and compact, and that offer higher densities.

DIN-Rail terminal blocks are used throughout multiple industries, integrating components within an individual machine to integrating multiple machines into a complete factory system. Both electrical and electronic devices are easily integrated using multi-use terminal blocks for a wide variety of industries, including aerospace, medical, oil & gas, automotive, semiconductor, packaging, transportation, power industry, and more.

What features should I consider when selecting a DIN-Rail terminal block?

Service life is the most important factor when selecting a DIN-Rail terminal block. Beyond that, engineers will want to consider ease and speed of installation, low maintenance capabilities, high efficiencies under multiple environmental conditions, and a high-density, compact design.

What are the basic types of DIN-Rail terminal blocks used today?

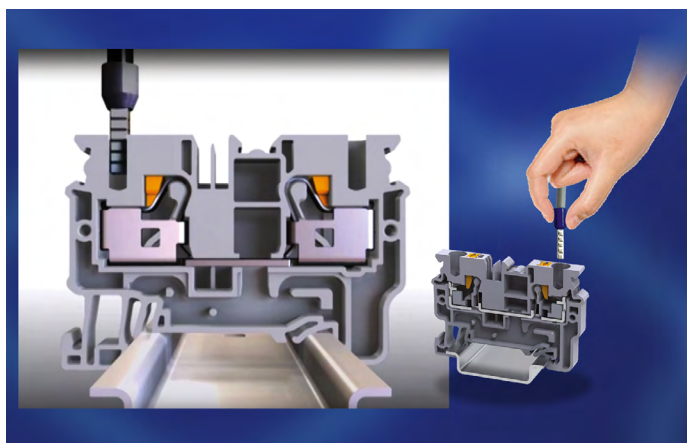
A variety of different DIN-Rail terminal blocks are available on the market. Some standard terminal blocks that have been available and incorporated for years include the screw type blocks. These devices have been used inside panels and junction boxes in factories and warehouses, and for distribution of electricity in homes and apartments. These terminal blocks have been around

for a long time and are highly dependent on human interaction due to the need for screw-tightening at various torque values. These terminal blocks also require the use of different handheld tools, and some provide a locking feature to guarantee connection and prevent screw loosening.

The spring clamp or cage clamp terminal block offers an interconnection that requires less human interaction. These devices need a standard tool, such as a screwdriver, to open the spring, but specific torques are not required. A preloaded spring is used to keep the wire safely in place. Solid or stranded wire can be used to create a secure connection in less time than using a screw type terminal. Since these terminals have a natural resistance to shock and vibration, they are often used in applications such as automotive, elevators, and machine tools.

How are push-in DIN-Rail terminal blocks different than other types on the market?

The most important aspect is that no tools are required to secure a wire into a push-in terminal block. This aspect alone saves time on installation and maintenance endeavors. Due to advancements in materials and the changes in users' needs, push-in terminals can offer additional benefits as well.



How do push-in DIN-Rail terminal blocks operate?

Users can simply push solid wires or stranded wires with ferrules directly into the terminal block for the fastest and most reliable connectivity on the market today (see *Figure 1*). With minimal human interaction, these terminal blocks are ideal for use with automated and robotic wiring operations. This benefit alone has OEMs switching from established technologies to push-in technology.

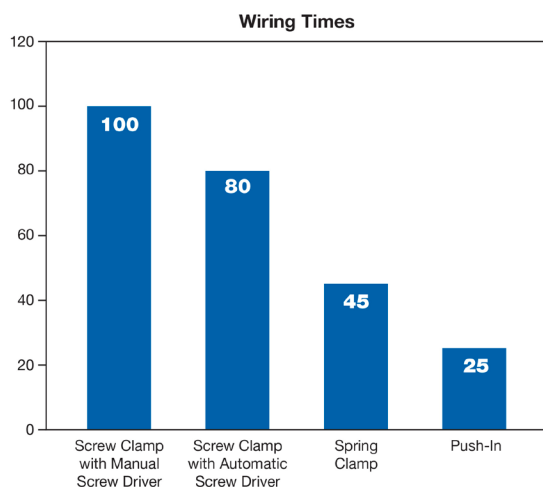


Figure 1: This chart illustrates the time savings gained from using push-in terminals compared with other types.

Do I have to worry about shock and vibration more if I incorporate push-in technology?

Not at all. In fact, switching to push-in technology also provides safety and reliability due to the terminal blocks' large pull-out force that is required to remove a wire once it's in place (see *Figure 2*).

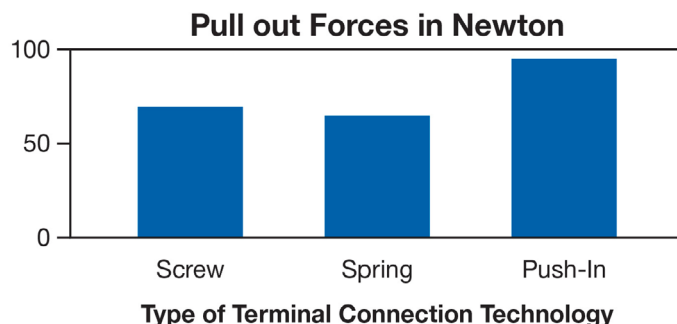


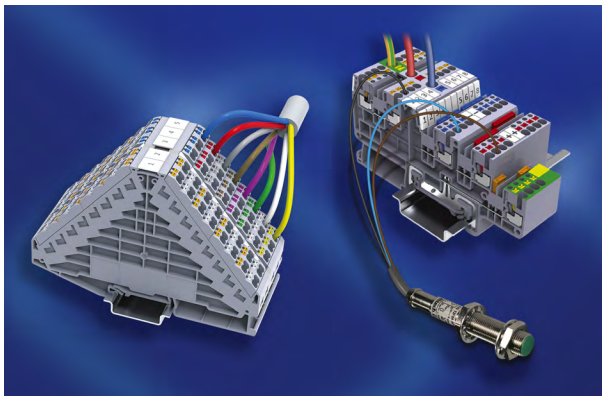
Figure 2: Pull-out forces for push-in terminal blocks are greater than that of screw or spring type terminal blocks, making them highly reliable for low maintenance and long-life applications.

How can end users benefit from push-in technology?

The key benefit gained while using push-in terminal block technology for end users is how well it streamlines the installation process for interconnecting all types of devices, including sensors, I/O, and DCS systems for process and automation control. Push-in terminals have minimum insertion force requirements — even to connect small wire sizes. The terminal blocks are designed to withstand harsh environmental conditions as those found in marine applications as well as chemical plants due to the use of non-ferrous metals in the connection components.

Are push-in DIN-Rail terminal blocks available for high-density designs?

The unique design of these terminal blocks allows them to be thinner than standard terminal blocks, even with a 600V capacity. Size reduction has allowed for 33% more wire density without compromising voltage stress, pollution degree, or surge voltage. For example, a compact 3.5mm wide terminal block thickness allows a 14AWG (1.5 sq mm) wire to be connected. In addition, specially designed terminal blocks are available for specific applications such as those below.



This photo shows specially designed terminal blocks, such as the sensor and actuator terminal block and the marshalling terminal block.

What other benefits might I want to know about when considering push-in DIN-Rail terminal blocks?

Push-in terminal blocks offer independent rows for the insertion of jumpers for shorting different types of terminal blocks without using external jumper wires. Markers can also be attached easily for identification purposes. These markers are visible from any angle inside a panel or enclosure for quick recognition. Push-in DIN-Rail terminal blocks also come in seven different colors for global electrical system use.

Are push-in DIN-Rail terminal blocks available in a variety of versions?

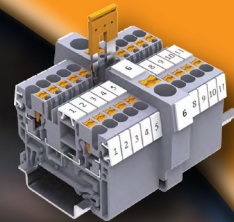
Push-in terminal blocks purchased through Altech are available in single-level, double-level, and multi-level versions, all of which have grounding versions as well as fused terminal blocks for several fuse types and sizes. Also, special sensor and actuator, knife disconnect, and marshalling terminal blocks, plus a wide variety of accessories are available.

Sponsored by

Altech Corp.[®]

Altech[®] HIGH QUALITY DIN Rail Terminal Blocks

Universal Push-In
Jumper Technology



CP Series with Push-in TECHNOLOGY

Highlights

- Tool-less wiring for easy connection
- Direct connection of solid wires and flexible wires with ferrules
- Stainless steel push-in spring
- No special tool required for pushbutton release
- Wide range of blocks for many design options
- Sensor & Actuator terminal blocks

Thinnest 3.5 mm wide
terminal block in the industry

c **AI** [®] US

Altech Corp.[®]

Contact info@altechcorp.com

908.806.9400

AltechTerminalBlocks.com