

FAQ

Modular DIN enclosure systems for innovative designs



DIN enclosure systems are widely used in industrial applications but have been limited in their versions. Modular DIN enclosures are providing systems design engineers more options to work with.

Q1: What do I look for in a DIN enclosure if my applications are varied and often complex?

Depending on the type of applications you are involved with, whether for industrial machines and equipment or electronic control applications, a modular enclosure that can handle a variety of connection types might be ideal. While some applications require fixed push-in terminals others might be more geared toward pluggable push-in terminals of various types.

Adaptation becomes key particularly with innovative designs. Be sure to look for terminals that are compact, offering high signal density to the user.

Q2: How would such an enclosure work?

Modular DIN enclosures are flexible and easy to install through a quick snap-together design. Integrated terminals are provided to connect wires from outside of the enclosure to PC boards inside of the enclosure. Common bus concepts can be integrated into the bottom assembly. Such enclosures should offer integrated test points for quick on-site access. The mounting position of a circuit board that is perpendicular to the top rail, as is how the Altech KV 4600 DIN enclosure is designed, makes it possible to integrate up to two circuit boards. An optional snap-in rail bus mounting system (In-Rail-Bus) allows for device communication for power, signal, and data transfer. Contact spring blocks with gilded double-spring contacts provide high contact reliability.

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Q3: Would a modular DIN enclosure allow me to have front-facing terminals for easy diagnostics?

Where most DIN enclosure provide side-facing terminal blocks, the right modular system would allow for front accessibility. A large front area would allow for full functionality as well as the flexible arrangement of terminals. Be sure the layout provides easy integration of common communication interfaces, including RJ45, D-Sub, USB, light conductors, radio, and NFC.

Q4: Would such a design allow for greater printed circuit board surface availability?

Absolutely. The PCB surface can be fully used for the layout since it is not blocked by the terminals. An open layout configuration increases board real estate so that designs can provide additional features not available from other enclosure systems. With the inclusion of lateral ventilation slots, optimum heat dissipation is available through free convection, allowing for applications that exhibit high thermal stress. The ability to pack more features into the board design, means that costs can remain lower than normal as well.

Q5: What aspects of the modular DIN enclosure would provide ease-of-use?

Consider solutions that offer fixed integrated and pluggable connection technologies. For example, pluggable terminal blocks could be arranged in line to allow for the use of prewired leads. This approach would save time and improve the handling of connections during installation, maintenance, and repair operations. Tool-free installation of conductors by pluggable push-in terminal technology provides for a modular terminal technology that makes wiring quicker, easier, and more reliable. Finally, a system such as Altech's KV 4600 offers an integrated plug removal aid to allow for the convenient unlocking of terminal blocks on an individual basis as needed. This is great for applications where high connection density is necessary under limited spatial conditions.

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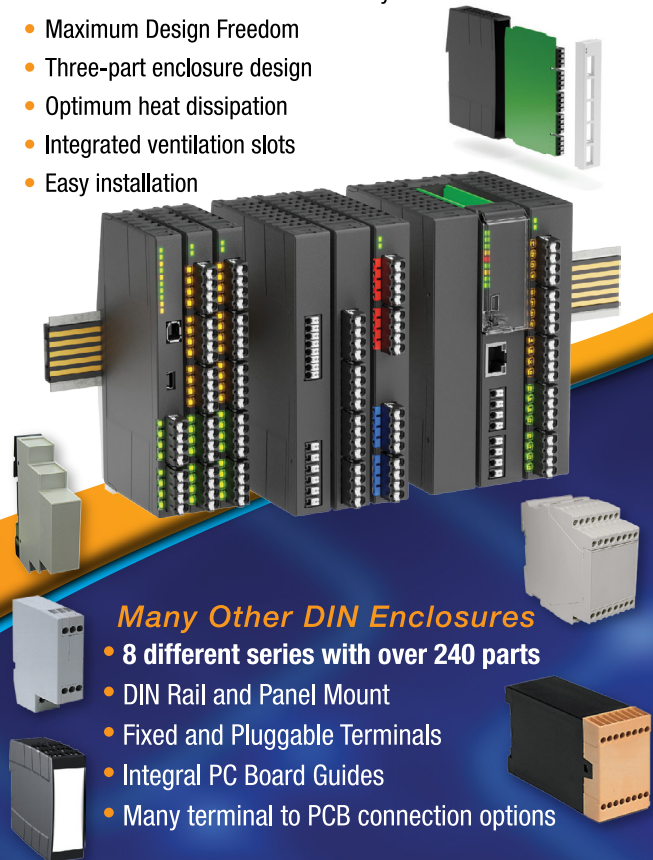
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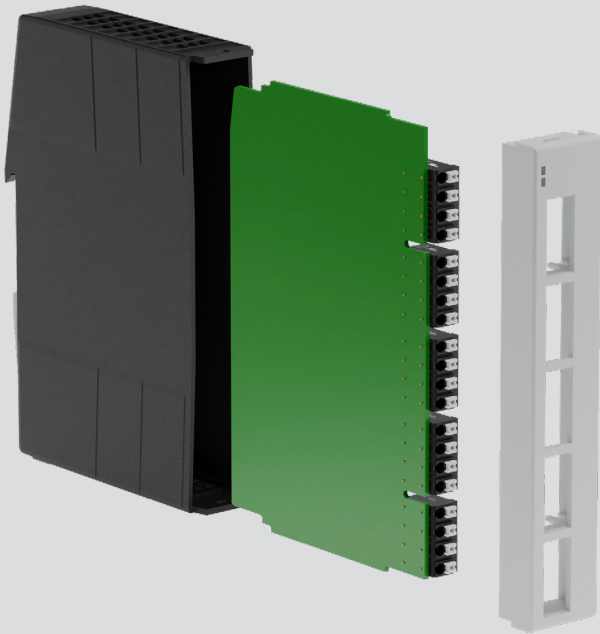


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Q6: Are such enclosures applicable for use in high shock and vibration situations?

The right modular DIN enclosure offers high mechanical stability and vibration resistance. This includes vibration-resistant connection of the conductors as well. When considering your environment, including shock and vibration, be sure to focus on each component and not just some of the components. Often designs may include vibration resistant mounts to the printed circuit board and forget to provide the same protection in their fixed or pluggable interconnections.

Q7: Are there versions meant for industrial IoT applications?

Modular DIN enclosures allow for common bus concepts to be integrated into the bottom assembly. For example, the I/O electronics enclosure (a variant of the KV 4600 series) offers a super compact module width of only 12.5mm with a depth of 66mm. The I/O enclosure was designed for modern control systems and industrial IoT applications such as in process engineering, discrete

manufacturing, and other applications where space is limited. They feature convenient front connection technology for the transfer of signals, data, and power. Device systems are often contacted and managed decentrally via bus systems. For this purpose, the I/O electronic enclosure offers connecting elements that are separately available and make it possible to link the individual modules.

Q8: Is marking available so that it is easy for maintenance and repair operations?

Because these modular DIN enclosures offer a large surface, they provide space for individual and abrasion-resistant laser markings and pad or digital printing processes depending on user requirements. There are also various methods used to code the individual terminal blocks to eliminate wiring errors as well.

Q9: Are other customizations possible?

Yes, modular DIN enclosures should offer an array of customization possibilities. Manufacturers can mill or mold in custom openings for different types of connectors or ports for all sorts of communication interfaces. These can be integrated into the front face or the side of the enclosure. Other options may be available as well, such as light conductors for status indication, grounding springs, and tilt-able front covers for manipulation protection. You should look for a supplier that offers many standard designs to choose from which can then be customized to meet your application requirements.

Q10: Are modular DIN enclosures available for a wide variety of applications?

The flexibility of modular DIN enclosures creates the broadest capabilities available in the market. DIN enclosure applications are literally limitless and are available to work with all manner of electromechanical devices including relays, sensing and monitoring devices, transducer, and printed circuit boards. Once you've decided the parameters of your system, it is easy to configure the right modular DIN enclosure for your needs.

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