

Rittal – The System.

Faster – better – everywhere.

AX. KX. **SYSTEM PERFECTION.**

Compact and small enclosures.



ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES





**End-to-end system solutions
for enhanced efficiency.**

SYSTEM 4.0

The new product platform for Industry 4.0

Following on from the Blue e+ cooling units and energy management systems, the compact enclosures AX and the small enclosures KX are the final links in the chain. As a result of this product launch, the entire Rittal core portfolio is ideally equipped for the new requirements resulting from digitalization and plays a key role in optimizing customers' value chains.

A system solution for even easier assembly

Simplifying procedures saves time and money. The new generation achieves this by significantly improving details that permanently optimize assembly – from tool-free assembly to removing the need to machine enclosures and maintaining UL approvals, even after replacing standard components with Rittal accessories. All this really helps make control and switchgear engineering processes simpler, faster, more flexible and more reliable.

The baying enclosure system is the first step into a completely new era of enclosure technology, an era characterized by a whole host of features for far easier installation and perfect integration into state-of-the-art manufacturing processes in line with Industry 4.0 principles. The new compact enclosures AX and small enclosures KX continue on seamlessly from this. The interior installation is largely compatible, which creates completely new engineering and installation synergies.



Compact enclosures AX



Basic enclosure AX, sheet steel
Basic enclosure AX, stainless steel
Accessories AX



Wall-mounted enclosures AX
with 482.6 mm (19") mounting angles, depth-variable
Accessories AX

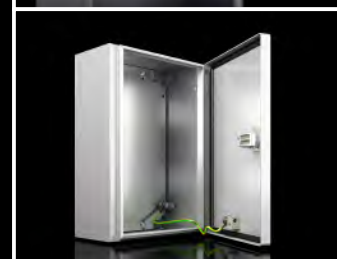


Operating housings AX with handle strips
Operating housings AX for desktop TFT up to 24"
Accessories AX

Small enclosures KX



Terminal boxes KX, sheet steel, without gland plate
Terminal boxes KX, sheet steel, with gland plate
Terminal boxes KX, stainless steel, without gland plate
Accessories KX



E-Box KX, sheet steel
E-Box KX, stainless steel
Accessories KX



Bus enclosures KX, sheet steel
Bus enclosures KX, stainless steel
Accessories KX



1961



2019

A wealth of experience for even greater efficiency.

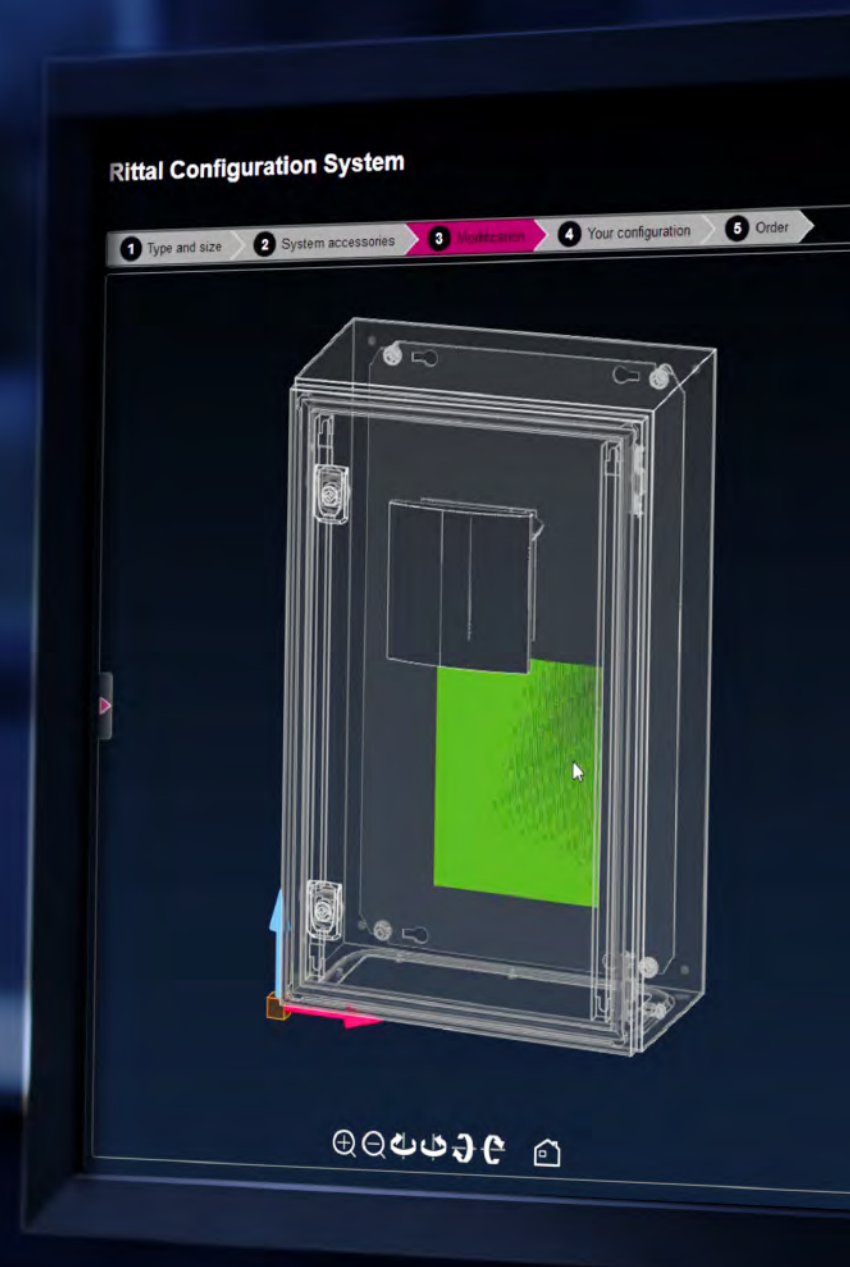
THE ORIGINAL

Rittal invented the standard enclosure

In 1961, Rittal was the first company in the world to series-produce enclosures. It all started with the compact enclosure AE, the predecessor of the current AX series. Going against industry advice, Rudolf Loh demonstrated a great deal of courage and considerable ingenuity in realizing his vision of industrial-scale enclosure manufacture.

New horizons – AE becomes AX

A modest range of enclosures developed into the world's largest modular system for enclosure manufacture. Since Rittal was founded, the company's impressive innovative strength has spawned numerous enclosure generations, with millions of units in use – always ahead of their time. The latest generation – the AX – is a response to the challenges of the Industry 4.0 era and is the new original.



Digital networking for optimized value creation.

THE SYSTEM CONSULTANT

Unrivalled added value from a single source

From engineering and system technology to automation – Rittal offers integrated, end-to-end solutions throughout the value chain. Rittal and Eplan software tools support the entire engineering process all the way through to documentation with high-quality and fully comprehensive offerings. With its coordinated enclosure, power distribution and climate control technology, the modular system from Rittal provides quick and flexible solutions for any challenge anywhere in the world. Thanks to equipment and tools for fully automated or manual machining and assembly, the efficient workflow never stops.

Saving time and boosting efficiency

Rittal data helps save a great deal of time in day-to-day work. It simplifies and facilitates design planning by seamlessly providing validated CAD data for all Rittal components. The resulting engineering data optimizes planning certainty. Even more efficient planning is possible with EPLAN Pro Panel, the leading software solution for project planning and 3D enclosure design. What's more, the EPLAN Data Portal provides detailed CAD data for configuring the AX and KX.



State-of-the-art production technology for a secure future.

THE TECHNOLOGY LEADER

Compact enclosures based on and geared towards Industry 4.0

A dedicated production plant has been built in Haiger for our new compact enclosures. A sum of 250 million euros has been invested in the world's most state-of-the-art production facility for compact and small enclosures based on Industry 4.0 criteria. The plant's highly automated production management will ensure the permanent availability of the standard portfolio.

AX is ideal for automated machining

This once again makes Rittal an industry pioneer. In addition to improving its own flexibility, the company also wanted to develop a high level of efficiency that could be carried right through to the customer's production process. Every enclosure leaving the newly built, highly automated Rittal plant in Haiger satisfies all the prerequisites for integration into downstream automated and mechanical processes. Thanks to the packaging concept developed specially for the AX and KX, panels can simply be taken out without having to be dismantled and then fed directly into our customers' production process.



Specific solutions for
any application.

THE INDUSTRY INSIDER

Solutions for every industry – around the globe

The AX and KX could not be more flexible and there's a good reason for this. Rittal knows all about the challenges digitalization is throwing up for the various markets. From plastics, chemicals, textiles and foodstuffs to automotive and mechanical engineering, Rittal meets the specific enclosure requirements of each and every sector of industry.

Internationally recognized approvals and certifications

Rittal enclosures are ideal for global use across a variety of industries. Internationally recognized approvals make it much easier to put the AX to quick and flexible use in any country the world over. The highest quality standards ensure reliability and a long service life, even under extreme conditions. Compliance with global standards and thus excellent future-proof credentials are ensured by stringent testing according to international regulations and regular production inspections by external test institutes.

Global logistics for rapid availability.

THE LOGISTICS PARTNER

Delivery off the shelf – within 24 hours

International customers expect short delivery times and flexibility when it comes to quantities. Rittal has the necessary logistics in place for a rapid response worldwide. The AX, the KX and the associated accessories are normally available anywhere in Europe within 24 hours. This makes customers' production operations far more flexible and also reduces the pressure on warehousing. Fully digitized workflows throughout the design and machining process create added value within the supply chain itself.

Global Rittal service network with 150 sites

AX and KX users can rely on the worldwide Rittal service network. A total of 1,000 trained Rittal service technicians are available at 150 service sites around the globe. In addition to maintenance and repair tasks, they also keep an eye out for potential savings. The global Rittal service center can be contacted 24 hours a day, 365 days a year.

Multiple benefits for new opportunities.

THE VALUE ADDER

Simple

Fully digitized processes with top-quality 3D data and QR codes on panels to be machined allow for seamless monitoring and simplify the order process – from the receipt of goods through to completion. Streamlining the number of parts makes engineering easier while maintaining the same diversity of dimensions.

Flexible

Modular designs and optimized cut-outs/sizes help to better utilize the space inside the enclosure. Rails and integrated locators simplify interior installation. Work is also made easier by being able to machine panels supplied loose immediately and install doors without needing tools. Reducing the number of parts simplifies logistics and warehousing.

Fast

The new highly automated plant in Haiger ensures quick delivery and permanent availability (normally within 24 hours anywhere in Europe). All panels are supplied loose and assembly is a largely tool-free process. The new wall mounting bracket can be fixed in place from the outside in next to no time.

Safe

Protection classes and approvals improve reliability. Integrated locators throughout the housing ensure the interior installation rails can be precisely positioned and securely fastened – even under dynamic loads. The protection category is maintained after wall mounting brackets are attached.



COMPACT ENCLOSURES AX – MORE **EFFICIENT**

Customized interior installation without machining and a wall-mounting system that is revolutionary in its simplicity save even more time.





Flexibility
Integrated locators in the housing enable the precise, time-saving incorporation of the interior installation rails used to fit out enclosures with punched sections with mounting flanges and accessories from Rittal.

Time saving
Thanks to the process-optimized packaging concept, production can get started straight away because all panels and cam locks are delivered disassembled, thereby removing the need for dismantling.



Ample space
The gland plate is up to 33 per cent larger, which provides more space for cable entry.



Stability
Interior installation rails that can be mechanically locked in place at a range of heights using the consistent pattern of integrated locators provide added stability, especially in the case of dynamic loads.



Reliability
The folded edge of the enclosure has a deliberately flat design that offers a generous and secure bearing surface for the seamless PU foam gasket and thus helps maintain the protection category (up to IP 66) and protection class IK 10.



Potential equalization
Special holes in the gland plate automatically ensure potential equalization during screw-fastening, which saves time and materials as well as improving safety.

Easy assembly

Tool-free door assembly saves even more time. Once the door has been positioned, the hinge pin simply needs to be pressed in to complete the process.

Flexibility

The AX door hinge can be switched to the other side with no need for machining, even on double-door enclosures. This makes it quick and easy to switch the lockable door, and can also free up additional space by allowing the installation of components/accessories on the door.

Extra security

The stable rod locking mechanism (fitted) with three locking points offers additional security on AX enclosures in a height of 1200 mm or more.

Time saving

Supplying the cam locks loose eliminates potential obstructions when machining the door and removes the need for time-consuming dismantling work beforehand.

Fast installation

The lock benefits from fast, tool-free installation. Following insertion, it simply needs to be locked in place and it's ready.

Larger surfaces

Thanks to its compatibility with Rittal system accessories, the perforated door strip with U-section and system punching in a versatile 25 mm pitch pattern makes it quick and easy to create more installation space without machining the door.

A good fit

Even when heavy components are mounted on doors, the runner on the perforated door strip ensures precise door positioning so as to maintain the protection category.

Making life easier

Easy dismantling of the fastening screw on the enclosure hinge makes it quick and straightforward to switch the door hinge to the other side. The door is not pre-installed, so there is no dismantling to add to the workload.

Wide angle

The normal door opening angle of 130° can be increased if necessary by replacing the standard hinge with a 180° hinge from the Rittal accessories portfolio.



Convenient fixing

The mounting plate is easy to pre-attach and secure firmly in place simply by inserting it from above.



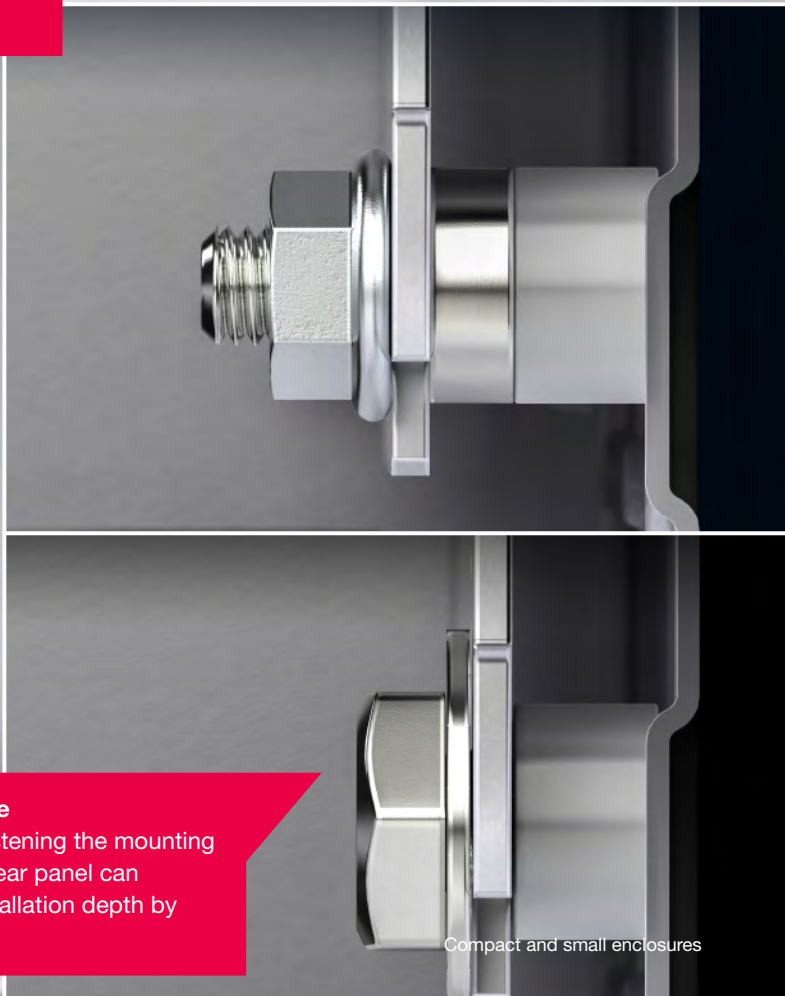
Straightforward earthing

The machined keyhole makes it much easier to earth the mounting plate with automatic potential equalization and this can even be done after the mounting plate has been screwed into place.



Full utilization of space

The option of screw-fastening the mounting plate directly onto the rear panel can increase the overall installation depth by 8 mm.



Compact and small enclosures



Easy assembly

Thanks to the series-standard eyelet in the rear panel, the wall mounting bracket can be quickly screwed into place from the outside using a self-tapping screw – without a lock nut on the inside. The high protection category is maintained without any restrictions.

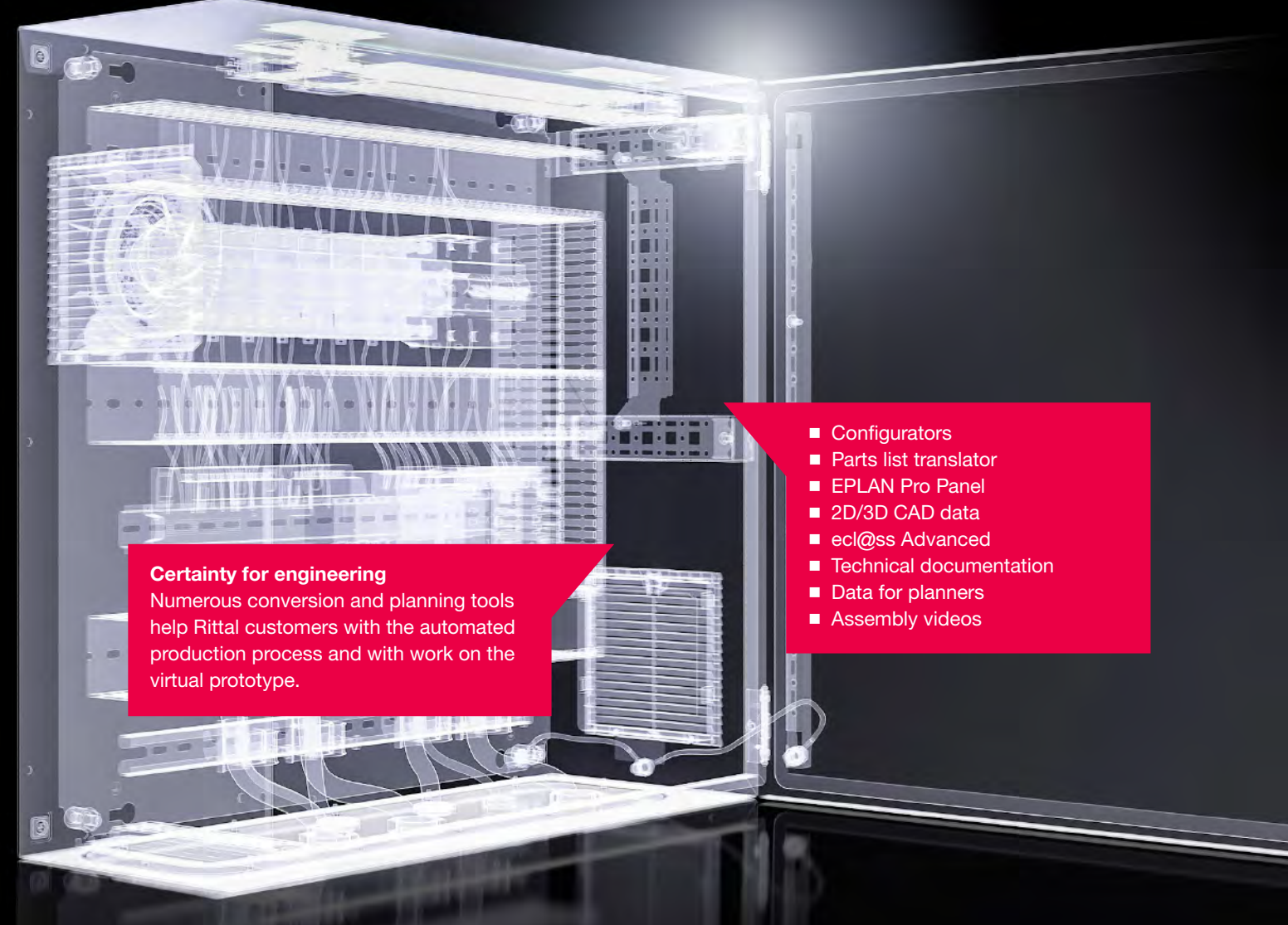


Compact and small enclosures



Digitalization

The QR codes on all the panels to be machined make it easier to automatically incorporate them into the production workflow and enable seamless, digital monitoring from goods receipt through to completion.



Certainty for engineering

Numerous conversion and planning tools help Rittal customers with the automated production process and with work on the virtual prototype.

- Configurators
- Parts list translator
- EPLAN Pro Panel
- 2D/3D CAD data
- ecl@ss Advanced
- Technical documentation
- Data for planners
- Assembly videos

Variety of industries

With a choice of sheet steel or stainless steel, the AX can be used in any sector of industry – at any location, in any climate or environment and in a whole host of custom applications.

Superior quality

Completing up to 5,500 AX enclosures per day, the world's most state-of-the-art Industry 4.0 mass production operation for compact enclosures ensures consistently high quality.



Compact and small enclosures

Corrosion protection

The three-stage surface treatment promises optimum corrosion protection and is resistant to mineral oils, lubricants, machining emulsions and several solvents.

- 1 Nanoceramic treatment
- 2 Electrophoretic dipcoat priming
- 3 Powder coating



Compact and small enclosures

Quality assurance

Rittal has its own accredited test laboratory, which repeatedly simulates the toughest conditions of all relevant sectors and applications so as to ensure high AX quality on a continuous and lasting basis.





OPERATING HOUSINGS AX – MORE **ERGONOMIC**

In conjunction with the Rittal support arm system, the integrated support arm connection always ensures the correct viewing angle and is therefore more ergonomic.





ACCESSORIES AX – MORE **RELIABLE**

Maintaining all relevant approvals when installing type-tested system accessories such as wall mounting brackets and gland plates improves reliability.





UL conformity
The series-standard UL approvals are maintained in full when inserting Rittal accessory components into existing or new enclosure openings.



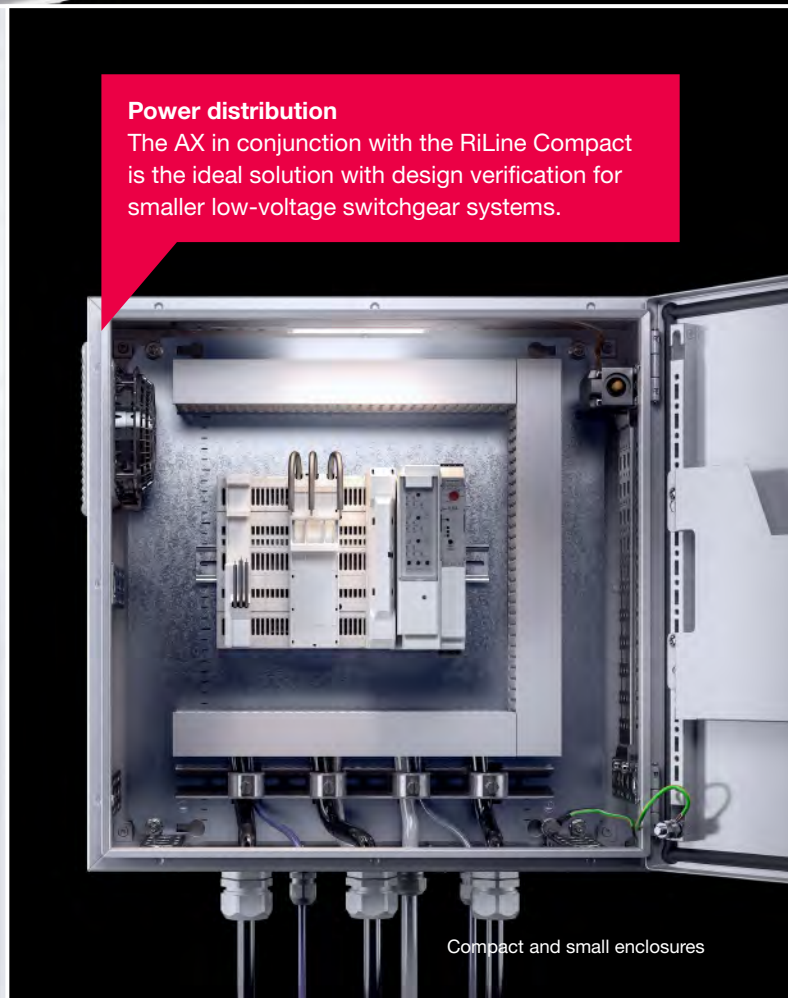
Fast installation
The rail for interior installation ensures that routine tasks such as installing door-operated switches or cable routing can be completed in next to no time without any machining.



Flexibility
No machining is required for door installations because the system accessories can be attached directly to the perforated door strip with U-section and to the system punching.

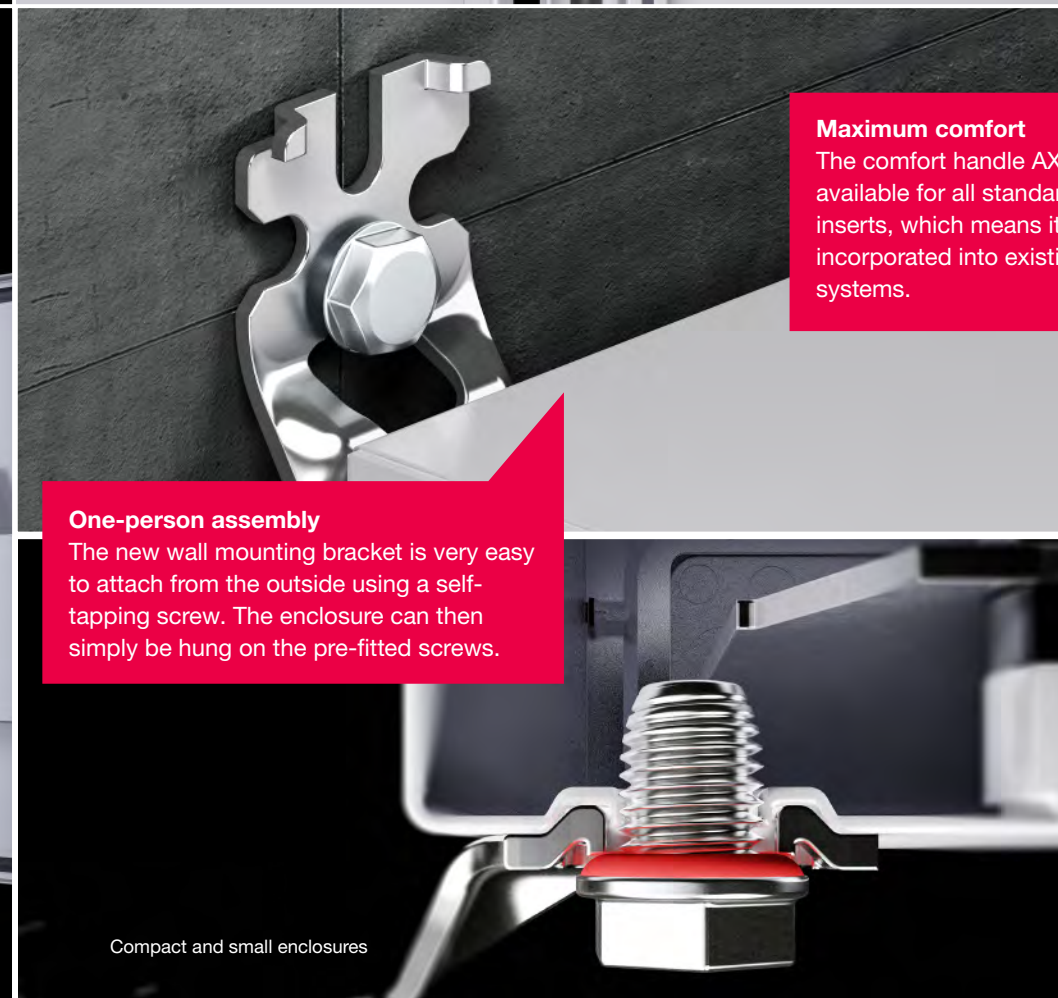


Interior installation
Custom enclosures can be configured quickly and easily due to the tool-free, height-adjustable mechanically locked fixing of the interior installation rail using integrated locators and thanks to full compatibility with the comprehensive range of system accessories.



Power distribution
The AX in conjunction with the RiLine Compact is the ideal solution with design verification for smaller low-voltage switchgear systems.

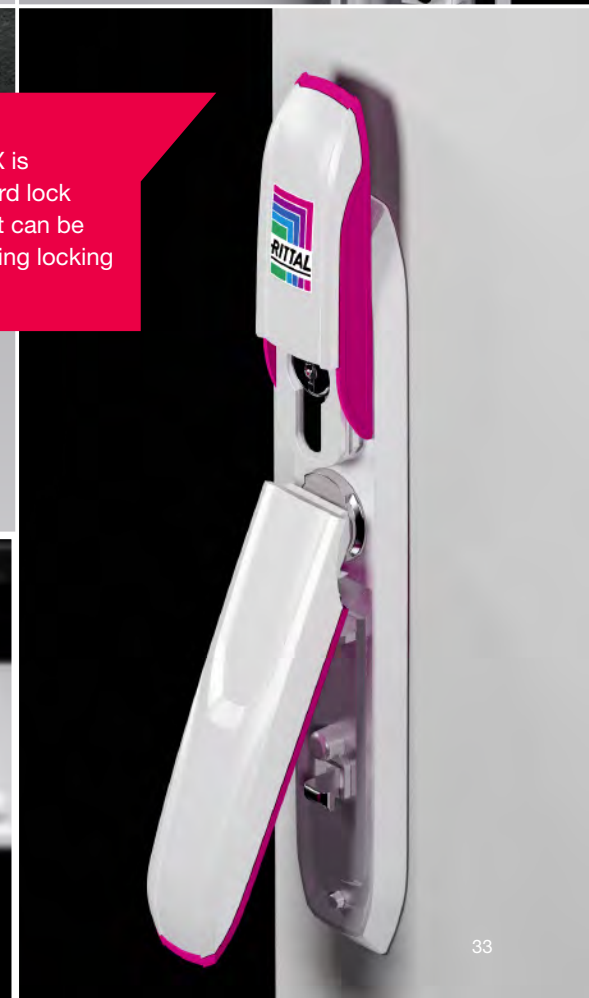
Compact and small enclosures



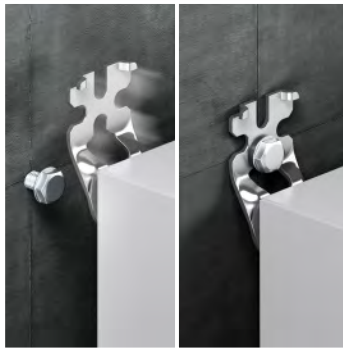
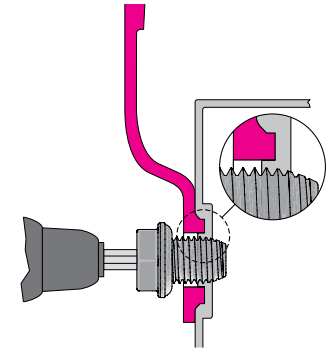
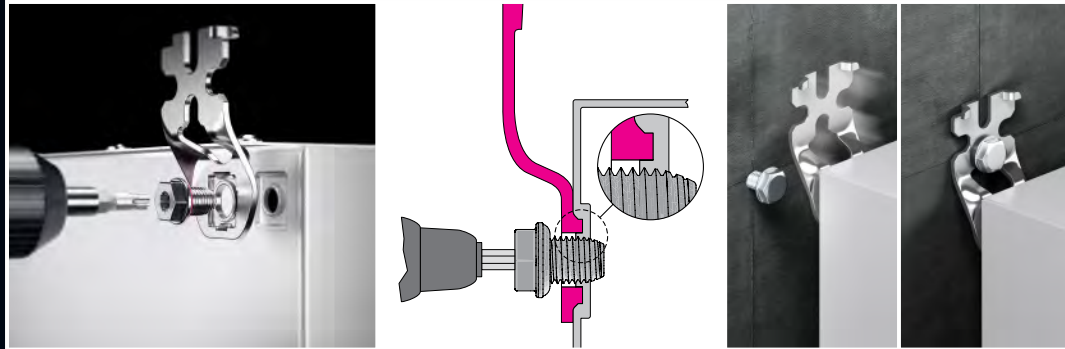
One-person assembly
The new wall mounting bracket is very easy to attach from the outside using a self-tapping screw. The enclosure can then simply be hung on the pre-fitted screws.

Compact and small enclosures

Maximum comfort
The comfort handle AX is available for all standard lock inserts, which means it can be incorporated into existing locking systems.



Compact and small enclosures



Wall mounting bracket, sheet steel
 Square knockouts for attaching wall brackets are provided on the rear of sheet steel enclosures along with an innovative eyelet for direct screw-fastening from the outside using self-tapping screws.



Wall mounting bracket, stainless steel
 Stainless steel enclosures have knockouts for anti-twist fixing of the wall mounting bracket and a hole punch mark. This saves time and means holes can be drilled without any measuring or marking. Stainless steel enclosures are closed at the rear for hygiene reasons.



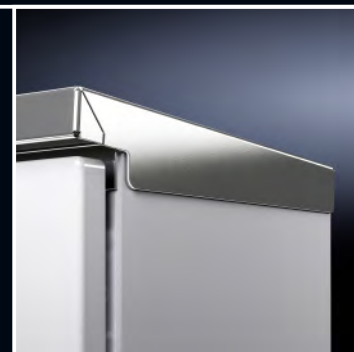
Base/plinth system AX
 The large opening in the base/plinth corner piece enables it to be screw-fastened to the enclosure directly from the front. Clip-in trim panels allow simple, fast access to the base/plinth for custom use, e.g. as a cable chamber.



Pole clamp
 The universal pole clamp makes it very easy to fasten enclosures to round or square poles without any machining.



Baying
 The baying kit can be used to bay enclosures with their own cut-outs quickly in compliance with the designated protection category.



Rain canopy
 The sloping rain canopy reliably protects the enclosure from standing moisture and other soiling from above. It can be attached to the enclosure without any machining.

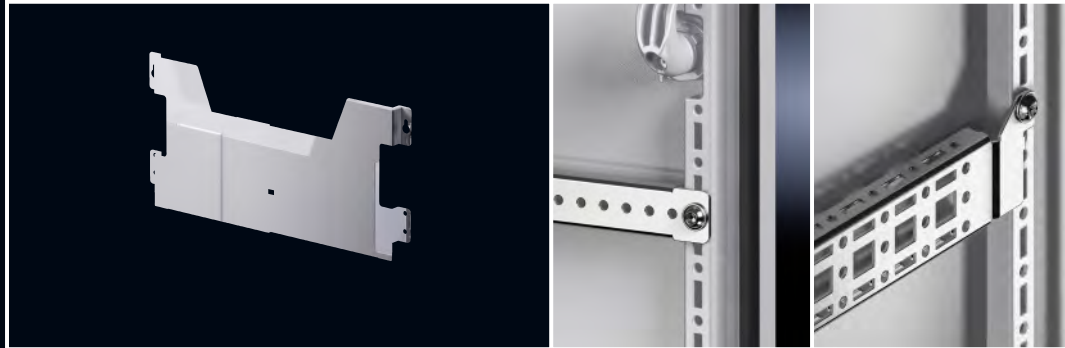


Eyebolts
 Eyebolts for transportation can easily be fitted using the holes provided as standard on larger enclosures. Reinforcement plates ensure safe transportation – even when heavy equipment is installed in enclosures.





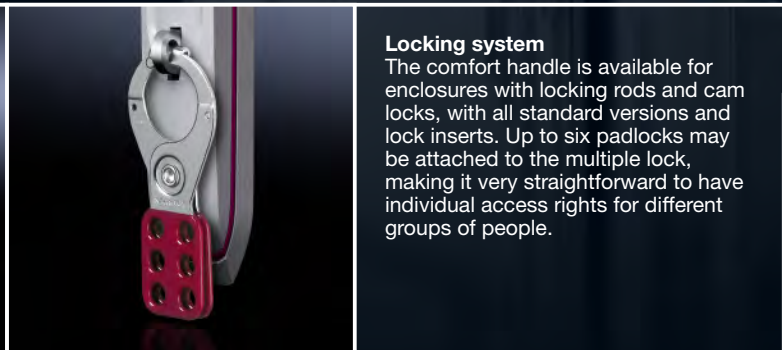
Door variants
 With appropriately dimensioned enclosures, both the viewing window and the operating panel can be used as a door variant. Enclosures can thus be used as a command panel and/or provide a clear view of the components inside.



Door installation
 The perforated door strip with integrated 25 mm system punching enables fully customized configuration with wiring plan pockets so that all important documents are always to hand. Punched sections with mounting flanges make it very easy to use doors as additional mounting surfaces.



Door installation
 180° hinges and a door stay make it possible to work unimpeded in the enclosure. There is no chance of the door unintentionally slamming shut and no obstruction if space is tight.

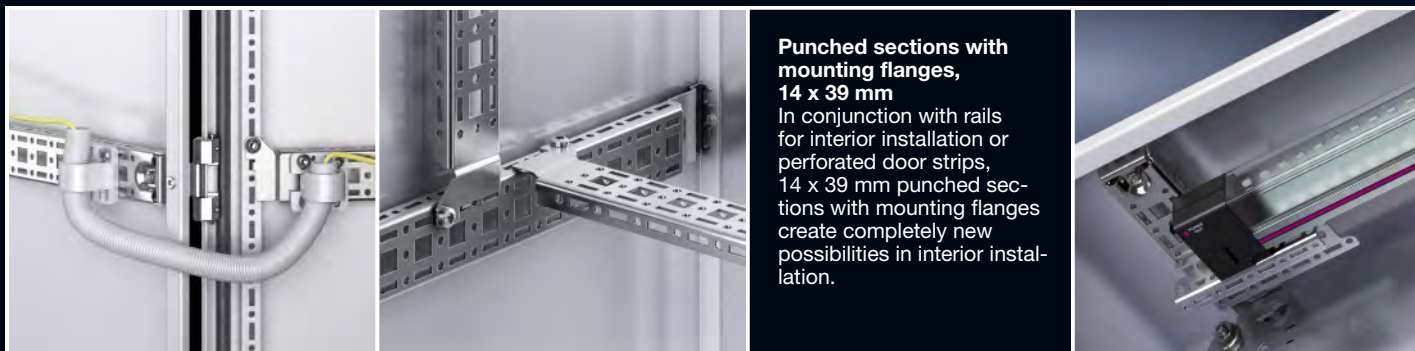


Locking system
 The comfort handle is available for enclosures with locking rods and cam locks, with all standard versions and lock inserts. Up to six padlocks may be attached to the multiple lock, making it very straightforward to have individual access rights for different groups of people.



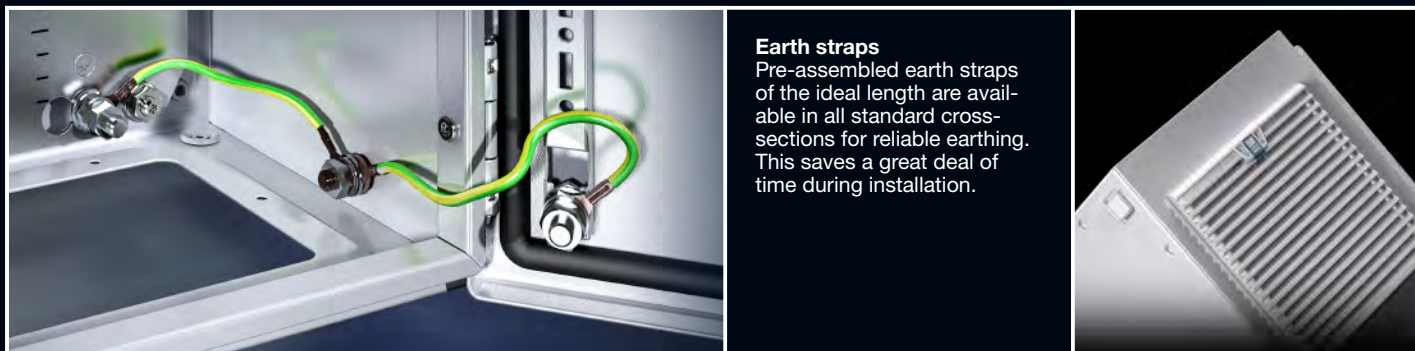


Rail for interior installation
The rail for interior installation instantly creates an additional mounting surface or the basis for full rail installation in a 25 mm pitch pattern. No machining whatsoever is required and the integrated locators in the enclosure ensure a secure hold – even under dynamic loads.



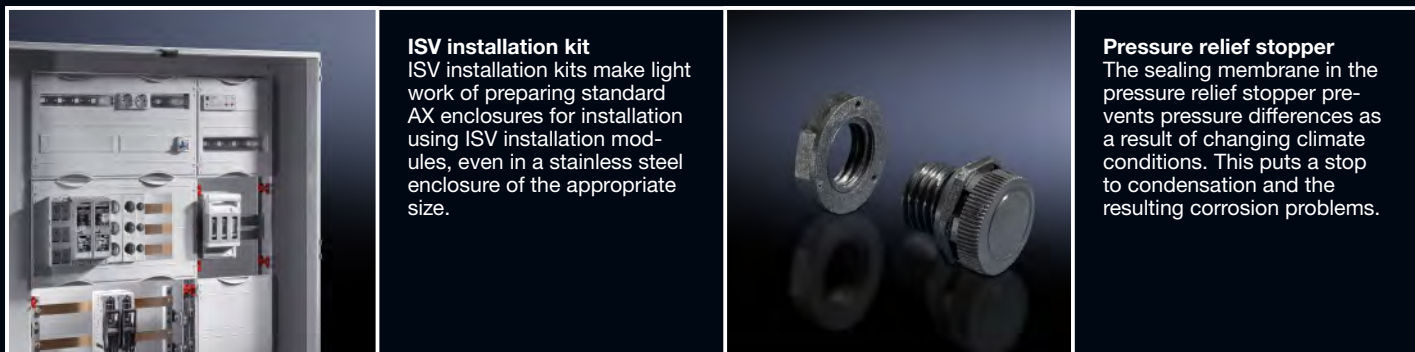
Punched sections with mounting flanges, 14 x 39 mm
In conjunction with rails for interior installation or perforated door strips, 14 x 39 mm punched sections with mounting flanges create completely new possibilities in interior installation.

Mounting bracket
This versatile bracket is used to attach LED system lights in the roof section or on the side of the enclosure in a 25 mm pitch pattern without any machining whatsoever.



Earth straps
Pre-assembled earth straps of the ideal length are available in all standard cross-sections for reliable earthing. This saves a great deal of time during installation.

Fan-and-filter unit
Rittal fan-and-filter units are the ideal choice for preventing hot spots in the enclosure. When they are used, even UL approvals are maintained in full.



ISV installation kit
ISV installation kits make light work of preparing standard AX enclosures for installation using ISV installation modules, even in a stainless steel enclosure of the appropriate size.

Pressure relief stopper
The sealing membrane in the pressure relief stopper prevents pressure differences as a result of changing climate conditions. This puts a stop to condensation and the resulting corrosion problems.



Condensate discharge
The condensate discharge reliably removes any unavoidable condensation that occurs inside the enclosure. The integrated labyrinth seal protects the enclosure against splashes. No machining is required for installation in the case of sheet steel enclosures.



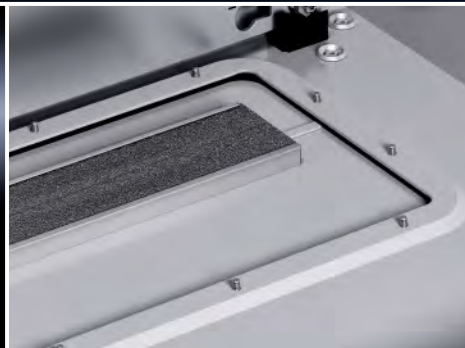
Cable entry, modular
This type of cable entry is completely flexible – even in the case of pre-assembled cables. The seal inserts can be adapted individually to the required cable cross-sections. The modular cable entry is available in the form of a gland plate and for installation on any desired surface.



Cable routing
The cable conduit and cable conduit holder ensure flexible and reliable cable routing between door and enclosure.



Rail for interior installation
This can also be used for cable routing or for assemblies such as terminal strips.



Gland plates
Rittal offers the perfect gland plate for every purpose – from plastic gland plates with membranes for rapid cable insertion and metal gland plates with metric knockouts for easy assembly of cable glands to gland plates with cable clamp strips for tasks such as inserting pre-assembled cables.



Connector gland, small
Whatever the surface, this component makes light work of introducing pre-assembled cables. Installation is possible up to a material thickness of 4 mm. Cables can be securely fastened to the integrated strain relief component using cable ties.



Cable glands
Depending on the application in question, cable glands are available in brass with nickel plating, in polyamide or as an EMC version. Integrated clamping membranes ensure reliable tightening and strain relief to protect the cables.





TERMINAL BOXES KX – MORE **PRECISE**

Consistent use of self-centering mini cam locks that can be installed without needing tools increases the level of precision and the size of the access opening.





Full utilization of space

The support rails can be mounted either on the front of the integrated perforated mounting strip or, for better utilization of the enclosure depth, directly on the enclosure's rear panel.

Precision

The mini cam lock works almost instantaneously. Even when locking, just a quarter of a turn is sufficient to correctly center and completely seal the lid.



Reliability

The folded edge of the enclosure has a deliberately flat design that offers a generous and secure bearing surface for the seamless PU foam gasket and thus helps maintain protection category IP 66.



Easy assembly

Thanks to the series-standard eyelet in the rear panel, the wall mounting bracket can be quickly screwed into place from the outside using a self-tapping screw – without a lock nut on the inside. The high protection category is maintained without any restrictions.

Potential equalization

Gland plate mounting includes automatic potential equalization. This is ensured by two self-tapping screws that are guided through special holes to establish contact.

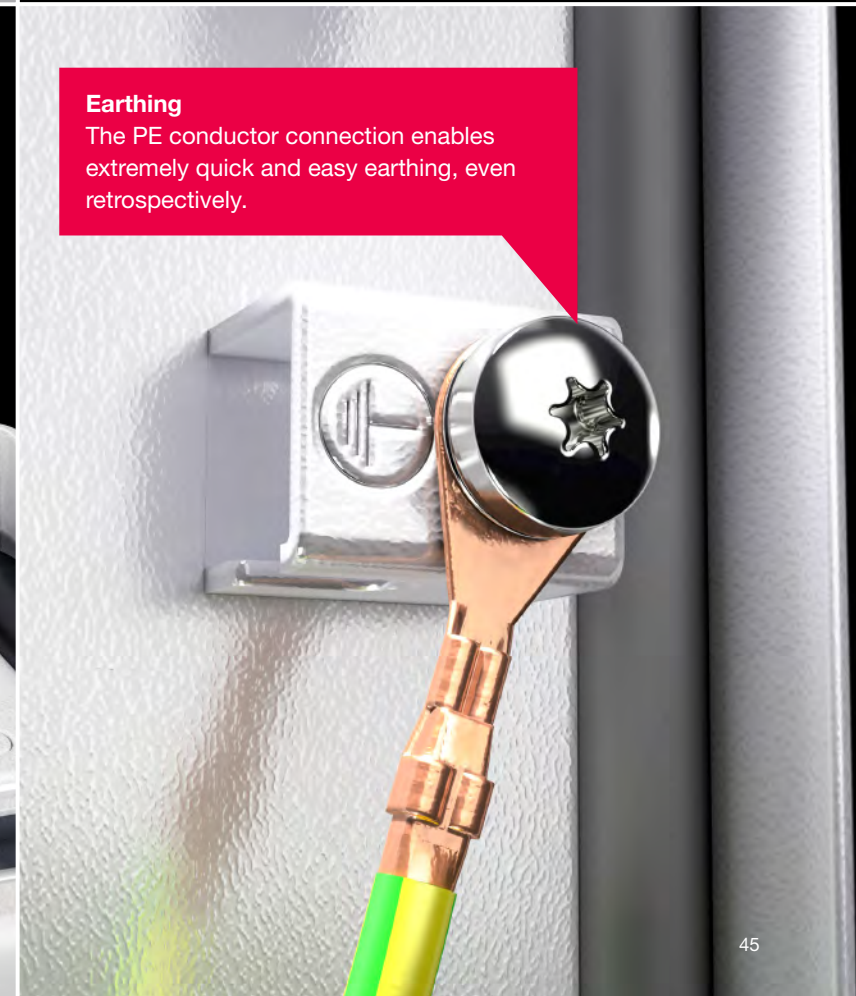


Earthing

The PE conductor connection enables extremely quick and easy earthing, even retrospectively.

Protection category maintained

The seamless PU foam gasket makes it possible to maintain the protection category within a temperature range of -20 °C to +80 °C and can be over-painted if necessary.





E-BOX KX – MORE **TIME SAVED**

Simplified machining boosts efficiency, thanks to the door being supplied loose and tool-free cam lock installation.





Ample space
The 180° door hinges create more space and improve access to the enclosure interior.



Peace of mind
The cam lock with double-bit insert can be installed without using tools, locks the enclosure securely and can be incorporated into custom locking systems.



Reliability
The folded edge of the enclosure has a deliberately flat design that offers a generous and secure bearing surface for the seamless PU foam gasket and thus helps maintain protection category IP 66.



Speed
The mounting plate and door can be removed from the packaging and passed straight on for machining.

Easy assembly
Thanks to the series-standard eyelet in the rear panel, the wall mounting bracket can be quickly screwed into place from the outside using a self-tapping screw – without a lock nut on the inside. The high protection category is maintained without any restrictions.



Protection category maintained
The seamless PU foam gasket makes it possible to maintain the protection category within a temperature range of -20 °C to +80 °C and can be over-painted if necessary.



Earthing
The PE conductor connection enables extremely quick and easy earthing, even retrospectively.



BUS ENCLOSURES KX – MORE OF AN **OVERVIEW**

A lid that incorporates a viewing window and opens up to an angle of 180° provides easier access and a better overview of all control components.





Access

The wide door opening angle of up to 180° creates sufficient space to install modules with ease and replace them quickly. The large viewing window makes it easy to continuously monitor the components inside the enclosure.



Flexibility

Enclosures can be fitted with support rails or mounting plates as required.



Easy assembly

Thanks to the series-standard eyelet in the rear panel, the wall mounting bracket can be quickly screwed into place from the outside using a self-tapping screw – without a lock nut on the inside. The high protection category is maintained without any restrictions.



Precision

The quick-release fastener works almost instantaneously. Even when locking, just a quarter of a turn is sufficient to correctly center and completely seal the lid.



Reliability

The folded edge of the enclosure has a deliberately flat design that offers a generous and secure bearing surface for the seamless PU foam gasket and thus helps maintain protection category IP 66.



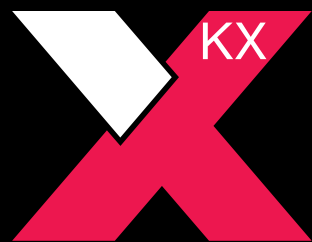
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Earthing

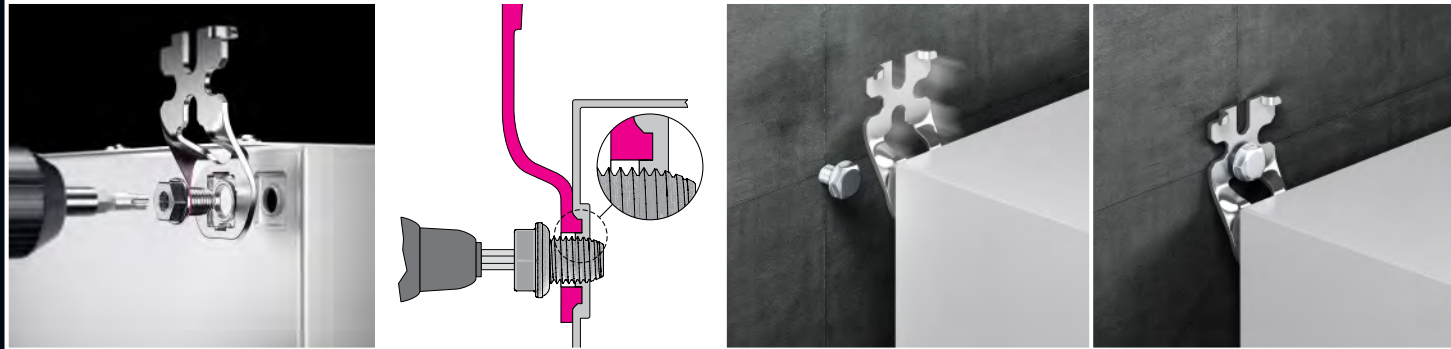
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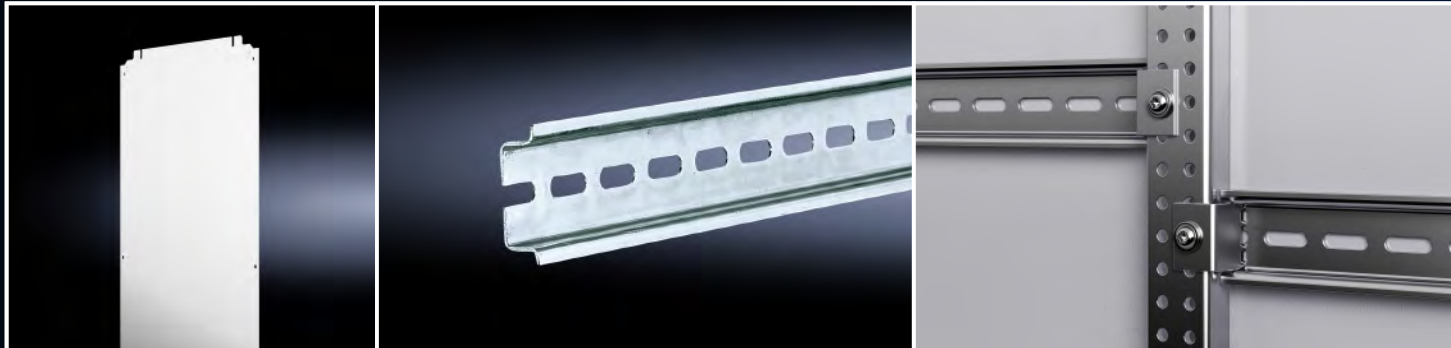
ACCESSORIES KX – MORE **POSSIBILITIES**

Accessory components that are perfectly coordinated with the enclosures offer more possibilities and significant savings.

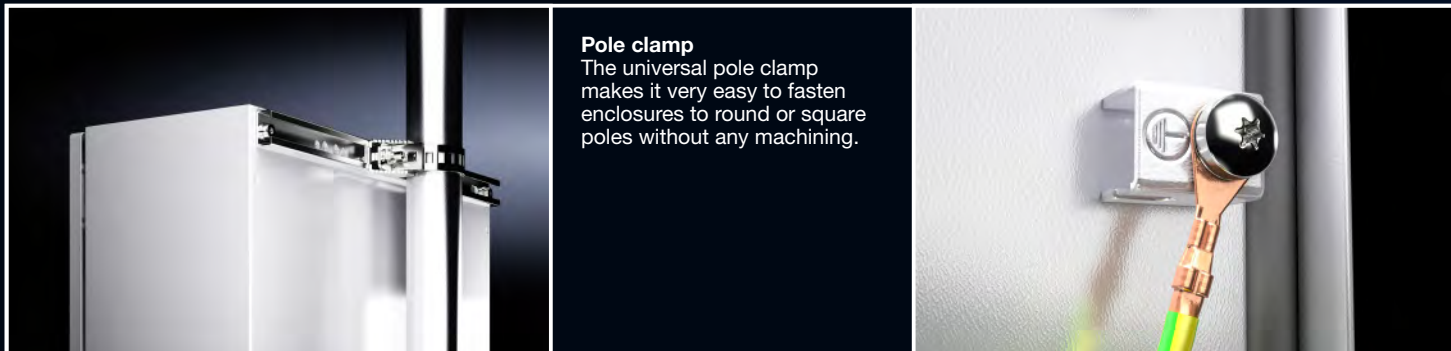




Wall mounting bracket, sheet steel
 The new wall mounting bracket allows instant anti-twist fixing in four different positions. All sheet steel enclosures support fastening from the outside with just one self-tapping screw. The enclosure's protection category is maintained in full.

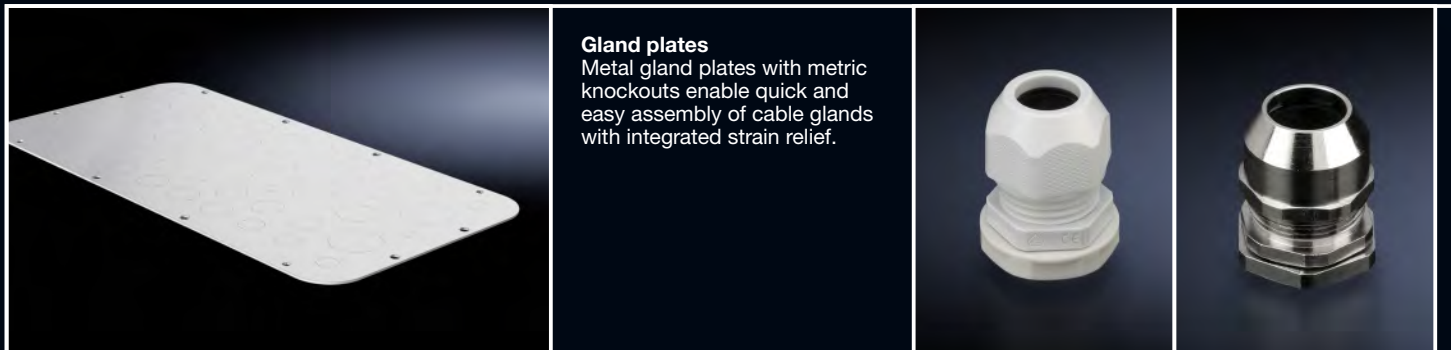


Mounting plates and support rails
 There's a perfect installation option for every application – whether configuring outside the enclosure or quickly snap-mounting equipment directly in the enclosure, even if utilizing the entire enclosure depth.



Pole clamp
 The universal pole clamp makes it very easy to fasten enclosures to round or square poles without any machining.

Earth straps
 Pre-assembled earth straps of the ideal length are available in all standard cross-sections for reliable earthing. This saves a great deal of time during installation.



Gland plates
 Metal gland plates with metric knockouts enable quick and easy assembly of cable glands with integrated strain relief.

Cable glands
 Depending on the application in question, cable glands are available in brass with nickel plating, in polyamide or as an EMC version. Integrated clamping membranes ensure reliable tightening and strain relief to protect the cables.



Rittal – The System.

Faster – better – everywhere.

- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

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ENCLOSURES

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