Rittal – The System.

Faster – better – everywhere.

SOLUTIONS SUITE

INDUSTRIAL AUTOMATION & IT

RITTAL

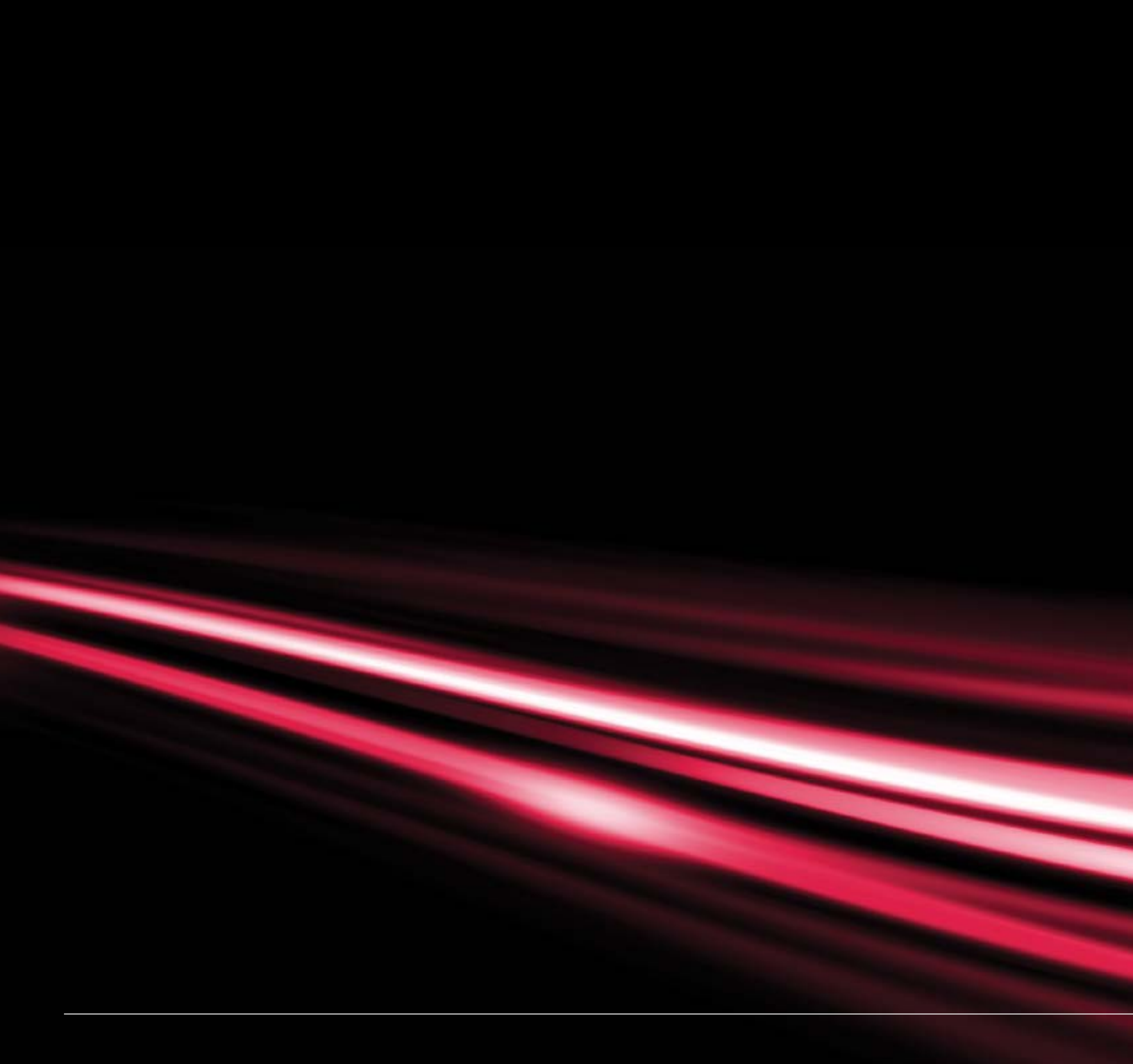FRIEDHELM **LOH** GROUP

INDUSTRIAL AUTOMATION & IT

SIMPLIFIED. DONE.

Modular design, forward-thinking engineering, and seamless integration make it easier than ever before for manufacturers to unify each step of the industrial automation process, from planning to production.

■ **Emphasis on Automation:** The integrated planning, production, modification, and deployment of critical plant infrastructure such as enclosures, climate control, and IT racks creates the need for a more visible production cycle to identify redundancies, streamline workflows, and reduce energy consumption and production costs.

■ **Leveraging Industry 4.0:** IoT-enabled devices create a smart production facility where decisions are made in a proactive as opposed to a reactive manner for greater flexibility and agility, readying companies for shifts in demand or production variables. The end goal is to optimize efficiency for higher profitability.

■ **Modification Center Network:** With modification centers and warehouses in Sparks, NV; Houston, TX; and Urbana, OH, operators from coast to coast have access to Rittal Automation Systems Perforex machines that perform precise and cost-effective cuts, holes, drilling, and other panel modifications, as well as our large distribution network for quick delivery, regardless of your location.

■ **U.S.-Made, Globally Deployed:** Behind our state-of-the-art U.S. manufacturing facilities is a global company with offices in more than 70 countries and production capabilities on 4 continents, giving Rittal's U.S. customers a true advantage over the competition and a reliable partner that can meet their needs — whenever and wherever their business might take them.

Rittal & EPLAN: Rittal's modular enclosures and Rittal Automation Systems machines coupled with EPLAN's powerful design software and database-driven engineering offers holistic automation for panel-building and switchgear manufacturing. Through one integrated value chain of engineering, sourcing, manufacturing, and operations, we provide an end-to-end streamlined solution that helps to reduce costs, shorten processing times, and increase productivity. It starts with EPLAN providing a single source for electrical engineering. Then, sourcing the ideal Rittal enclosures and accessories for your application. Next is manufacturing. There is a seamless export from EPLAN to feed the automated modification of enclosures and mounting panels to Rittal Automation Systems machines for: machining, assembly, wire processing, and wiring. Automating the engineering, sourcing and manufacturing processes reduces manual interventions and the chance for errors as well as increases productivity. And finally, operations allow data access from one single source as well as provide service and maintenance of enclosures.

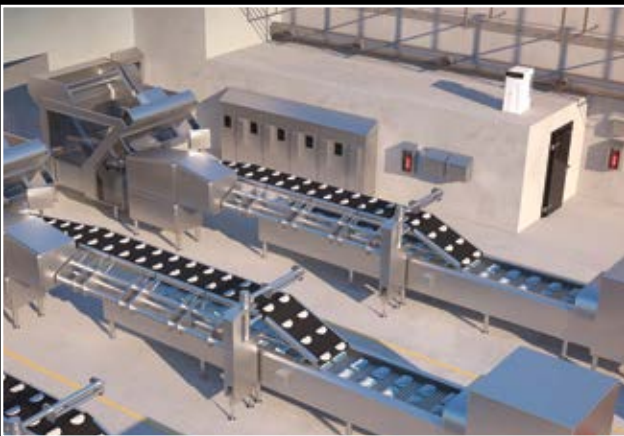## Challenges in Industrial Manufacturing

- Multiple production sites
- Speed to market
- Safety regulations
- Supply chain logistics
- Energy costs
- Data management
- Physical security

STREAMLINING WORKFLOWS ACROSS INDUSTRIES

Rittal's industrial enclosure, climate control, and IT infrastructure solutions are designed and engineered to meet the toughest industrial challenges. Industry 4.0 and IoT integrations make Rittal's products the smartest, most efficient choice for deployment across industries.

Automotive Industry: Today's variant-rich automotive production lines require adaptability. Rittal's modular enclosure design, flexibility with cooling unit mounting, and innovative IT cabinets provide the customization necessary to facilitate standardized, efficient production sequences across multiple plants or sites. UL 508A Certified flange mount disconnect enclosures, such as the TS 8, help to ensure arc flash safety and security with one simple switch as doors cannot be opened while the system is energized.

Food & Beverage: Rittal's hygienic design enclosures and climate control solutions are engineered specifically for use in the food and beverage industry and are designed to stand up to aggressive sanitation protocols to help ensure production equipment is clean at the microbiological level.

Oil & Gas: Not only do Rittal enclosures stand up against the harshest environmental conditions, but our state-of-the-art infrastructure and digitalization solutions pay dividends throughout the supply chain upstream, midstream, and downstream – from extraction and transportation all the way through to processing.

Colocation: Colocation providers face high demands on several fronts: adaptable racks, reliable power supplies, climate control, network connections, and monitoring. They rely on Rittal's IT solutions to maximize availability and help ensure optimum security levels while maintaining flexibility and meeting all relevant global standards.

Retail & Logistics: In a highly automated industry with a wealth of environmental and installation variables, Rittal's enclosures, climate control, IT infrastructure, and industrial automation solutions are engineered to protect the sensitive hardware necessary to facilitate speed, efficiency, and transparency.

ACCELERATING THE EVOLUTION OF INDUSTRY

RITTAL & EPLAN

In a partnership that reimagines the industrial automation process from design to deployment and all points in between, Rittal and EPLAN bring together a modular engineering philosophy, precise and automated Rittal Automation Systems machines, and powerful, database-driven electrical engineering to provide maximum efficiency and visibility to the panel and switchgear production process.

EPLAN Electric P8

Database-driven platform for electrical controls design — digitized controls data forms the foundation for the automated creation of machine and plant documentation

EPLAN Pro Panel

Design and build control cabinets, switchgear systems, and power distribution systems for energy supply, all in 3D
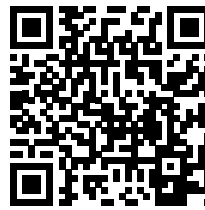
EPLAN Data Portal

Integrated, web-based data portal with up-to-date device data from leading component manufacturers

EPLAN ePULSE

Secure cloud solution connects data, projects, disciplines, and engineers worldwide in a collaborative environment.

Explore Enclosure Manufacturing 4.0

From engineering design to automated machining and wiring to enclosure design that greatly simplifies assembly and enhances efficiency.

EPLAN Engineering Configuration (EEC)

Tool for designing and applying configuration interfaces and for automatically generating documentation

EPLAN Preplanning

CAE software that enables you to capture engineering data from the start of the engineering phase, for example, the actuators and sensors for a plant, machine, or building
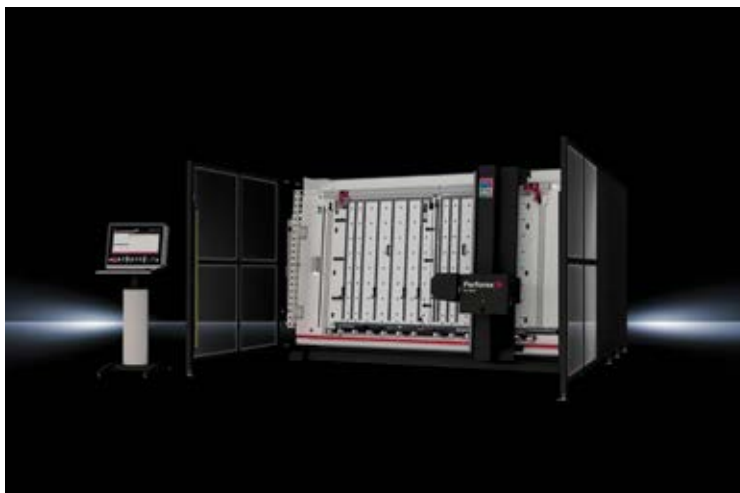
EPLAN Fluid

Engineering tool for designing and automatically documenting the schematics for fluid-power systems with hydraulics, pneumatics, cooling, and lubrication requirements

Explore The Modification Center

Rittal's Houston Modification Center houses industry-leading industrial automation tools to provide rapid, precise, and scalable industrial panel and switchgear modification services. Complete with an 85,000 square foot warehouse and robust inventory of component parts, our Houston Modification Center is the best-in-class choice for panel customization and modification.

Rapid Panel and Enclosure Modifications to Suit any Need

Each of our modification centers and distribution warehouses in Sparks, NV; Houston, TX; and Urbana, OH, keeps a large inventory of Rittal's most popular enclosures and accessories, ready to modify, assemble, and ship with fast turnaround - saving our customers time, effort, and money on modifications.

Our state-of-the-art mod centers are equipped with our own Rittal Automation Systems precision tools and machinery for making rapid modifications. This streamlines the entire enclosure assembly process and increases the accuracy and repeatability of enclosure and panel modification. Rittal's modification centers provide precise cutting, drilling, tapping, and other enclosure and modification services to help customers from coast to coast shift the burden of modifying and/or assembly of enclosure systems to the highly trained Rittal technicians utilizing RAS machines designed specifically for modifying enclosures. This can help just-in-time shipments to be more cost efficient and boost your in-house productivity... And because we design in EPLAN, the entire process is shareable and scalable.

INDUSTRIAL AUTOMATION
PRODUCTS ENGINEERED FOR INDUSTRY 4.0

Free Standing and Modular Enclosures

Rittal's modular enclosures provide the durability and protection you need for electrical components with the adaptability and customization to fit any application. Stainless or carbon steel construction provides a variety of configuration possibilities.

VX SE: With a high protection category up to IP 66/NEMA 4 or 4X, the VX SE free-standing enclosure system offers versatility. Where compact enclosures are too small and baying enclosures are too large, the VX SE is an ideal midway alternative for applications where baying is not required. Additionally, the VX SE size range includes a 300 mm deep version that is suitable for applications where space is limited.

TS 8: The TS 8 baying enclosure system features a cleverly designed frame section. Interior installation may be implemented on two mounting levels to maximize the use of space inside the enclosure.
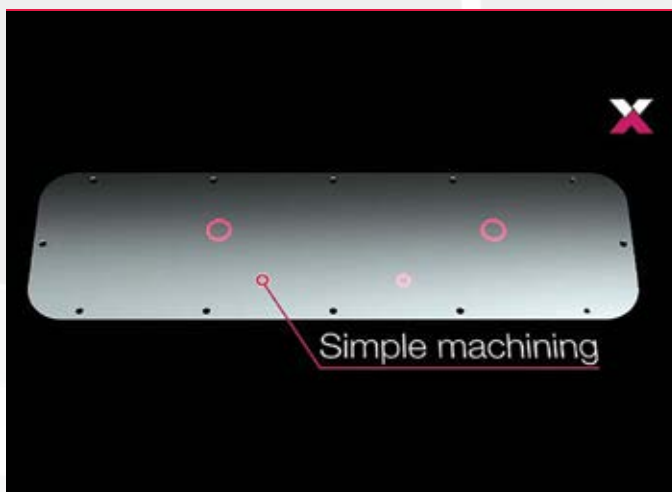
Innovative design and forward-thinking engineering create the flexibility and scalability necessary to succeed in today's global manufacturing landscape.

Watch as Steve Sullivan discusses the unique benefits of a Rittal TS8 freestanding modular cabinet.

TS8 benefits include: efficiency, flexibility, quality and safety.

Simple machining

Wallmount Enclosures

Stainless and carbon steel WM/JB construction provide the maximum durability and protection for the electronic components inside the enclosure. The brand new AX/KX line of industrial enclosures is designed with Industry 4.0 and IoT principles in mind to provide end-to-end efficiency for deployment in sophisticated industrial automation systems. This innovative design is available in both steel- and fiberglass-reinforced polyester, offering increased cable density and a new packaging concept, saving both time and cost. NEMA and IP ratings are ensured through a secure locking system and foamed-in-place gasket. These enclosures come with mounting panel included and are made with best-in-class optimum surface finish.

Hygienic design enclosures are tailored to the requirements of the food and beverage industry and engineered for superior cleanability, these enclosures feature a 30° forward sloping roof, no gaps between the enclosure and the door, and a blue seal that is easy to distinguish from foodstuffs. Up to IP 66 and IP 69K.

INDUSTRIAL AUTOMATION
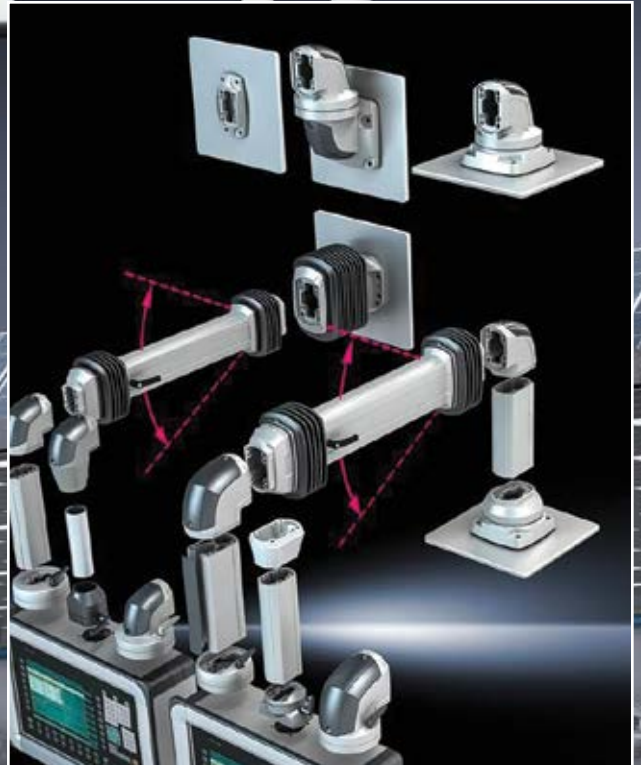## PRODUCTS ENGINEERED
FOR INDUSTRY 4.0

Human Machine Interface

NEMA-rated carbon steel and stainless steel HMI consoles allow for process automation and the implementation of Industry 4.0 principles. Up to NEMA 4/4X and IP 66 rated.

Command Panels: Command panels in aluminum and carbon steel meet the highest ergonomic and assembly efficiency requirements and can often be combined with Rittal support arm systems and pedestals.

Consoles and Workstations: From PC protection to overall console security, Rittal's consoles and workstations are designed and engineered to be the ultimate in durability and security to prevent unauthorized access and ingress of foreign contaminants.

HMI Enclosures: For surface, pedestal, or pendant arm mounting, our HMI enclosures accommodate touchscreens and digital controls with multiple configurations.
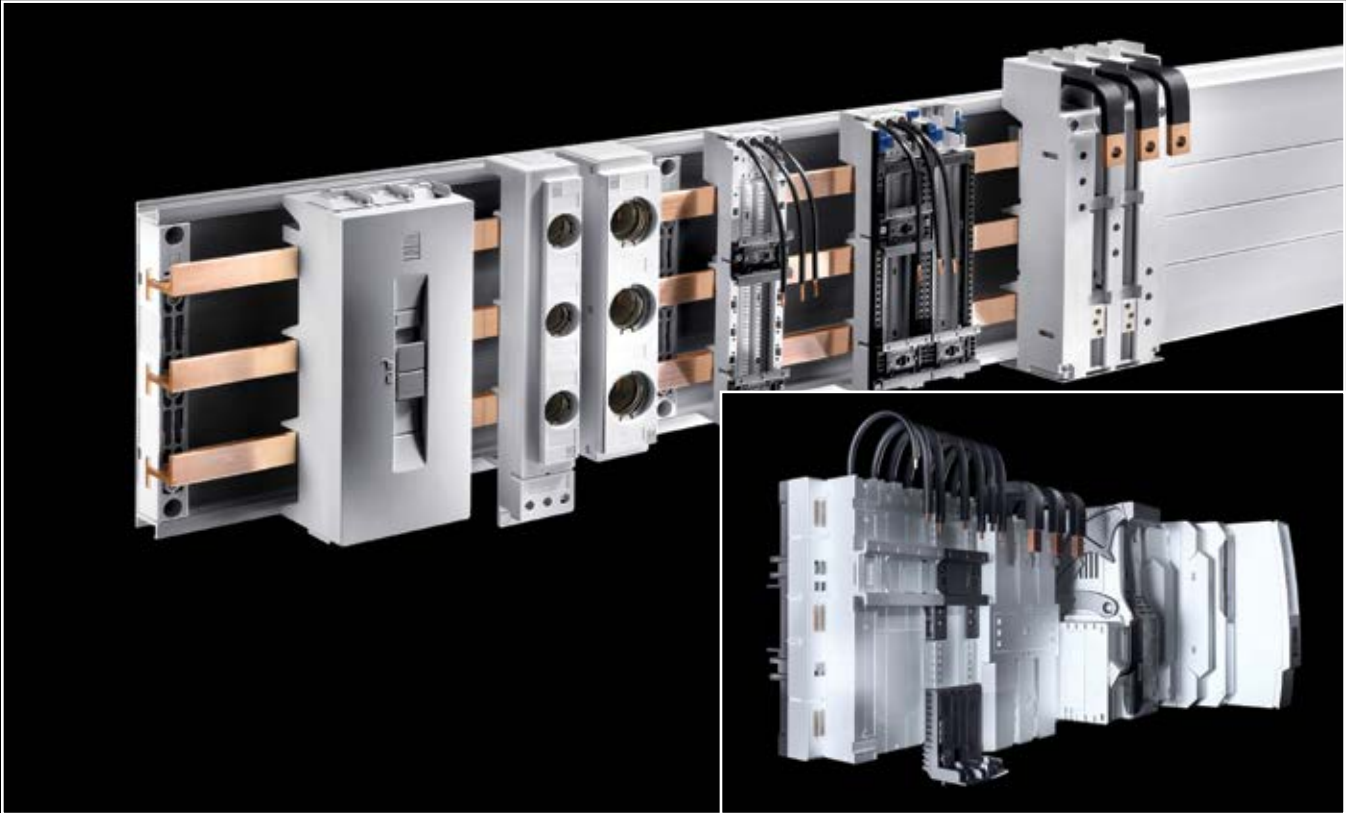
Pushbutton Boxes: Designed for indoor use to house pushbuttons, selector switches, and pilot lights.

Support Arm Systems: Pendant arm systems provide quick and easy installation of an assortment of components for ready access and optimum performance, and uniform adjustments without dismantling current installations.

HMI Accessories: System accessories for command panels and external mounting accessories for enclosures: front assembly of command panels, monitors, handles, supports and drawers for keyboards, mouse holders and supports, interface flaps, signal pillars.

INDUSTRIAL AUTOMATION
PRODUCTS ENGINEERED
FOR INDUSTRY 4.0

Busbar Power Distribution

When it comes to future-oriented solutions for modern low voltage power distribution used in industrial automation applications, you are on the right track with Rittal busbar systems. RiLine is a flexible 60 mm system, assembly-friendly, time-saving, individual, and modular. Industrial automation will benefit from RiLine busbar technology as it is versatile for a wide range of applications, has individual modularity, and is tested for safe operation.

Rittal also offers RiLine Compact system for low amperage applications that is based on a board with integral circuit board conductors and a contact pitch pattern throughout. The board and all components are easily top-mounted; no tools required. Securing the components simultaneously helps ensure a secure electrical connection to the all-round shock-hazard-protected board. The contact pitch pattern of the RiLine Compact system allows the assemblies to be positioned wherever they are required.

Ri4Power Form 1-4 is an individual system for the configuration of tested low-voltage switchgear with inner Form separation. The flexible combination of Ri4Power field types supports optimum configuration for a wide range of applications. Ri4Power Form 1-4 offers a very high level of operator protection. Thanks to extensive busbar insulation and subdivision of the compartments, the occurrence and spread of accidental arcing is largely prevented.

Tested safety

- Design verification to the internationally valid standard IEC 61 439-1

- Tests with ASTA certification

- Protection category up to IP 54

- Tested accidental arcing protection to IEC 61 641

- Additional preventative accidental arcing protection

CLIMATE
CONTROL SYSTEMS

With an emphasis on automation, network connectivity, analytics, and actionable data, Rittal's climate control solutions maintain efficient, consistent cooling for enclosures and electronics.
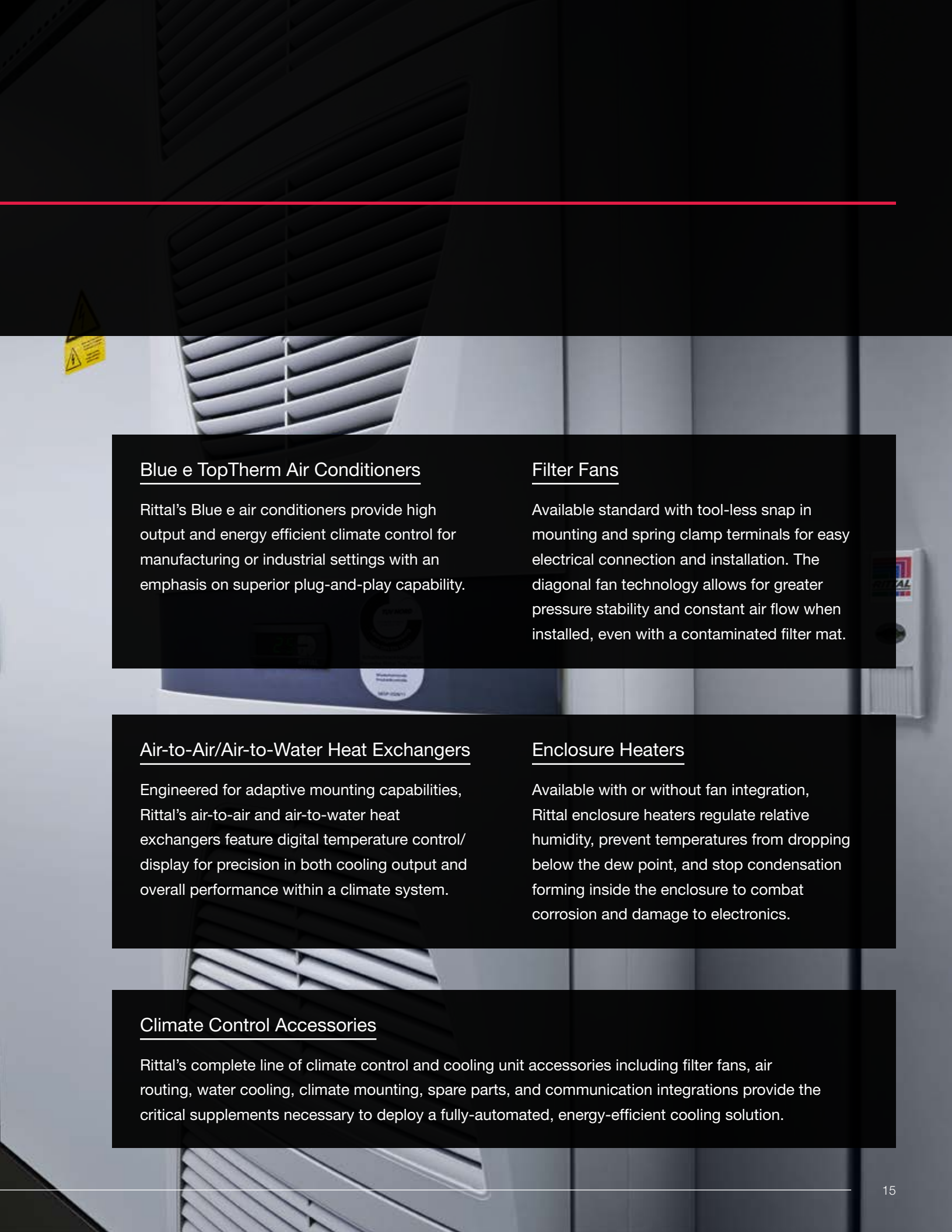
WATCH
THE VIDEO

Blue e+ Air Conditioners w/ IoT Interface

Reduce energy costs by an average of 75% due to Rittal's hybrid technology that leverages both active and passive cooling. Remote monitoring and systems alert capability via the IoT interface. The most energy-efficient climate control system on the market today.

Blue e+ Chillers

Up to 70% energy saved due to speed-regulated components and demand-based inverter technology. UL 60335-2-40 Certified as well as international certifications and multi-voltage capability for worldwide use. Intuitive operation using touch display and intelligent communication interfaces helps to ensure convenient operation and analysis.

Blue e TopTherm Air Conditioners

Rittal's Blue e air conditioners provide high output and energy efficient climate control for manufacturing or industrial settings with an emphasis on superior plug-and-play capability.

Filter Fans

Available standard with tool-less snap in mounting and spring clamp terminals for easy electrical connection and installation. The diagonal fan technology allows for greater pressure stability and constant air flow when installed, even with a contaminated filter mat.

Air-to-Air/Air-to-Water Heat Exchangers

Engineered for adaptive mounting capabilities, Rittal's air-to-air and air-to-water heat exchangers feature digital temperature control/display for precision in both cooling output and overall performance within a climate system.

Enclosure Heaters

Available with or without fan integration, Rittal enclosure heaters regulate relative humidity, prevent temperatures from dropping below the dew point, and stop condensation forming inside the enclosure to combat corrosion and damage to electronics.

Climate Control Accessories

Rittal's complete line of climate control and cooling unit accessories including filter fans, air routing, water cooling, climate mounting, spare parts, and communication integrations provide the critical supplements necessary to deploy a fully-automated, energy-efficient cooling solution.

FLEXIBLE, SCALABLE INFORMATION TECHNOLOGY SOLUTIONS ____

Modular IT infrastructure solutions designed for use nearest the Edge to inform data-driven decision making. Rittal's innovative, modular IT network/server racks, cabinets, data center cooling solutions, and accessories put the power of real-time data in your hands.

RIMATRIX NEXT GENERATION (NG)

The RiMatrix NG is a fully-integrated data center featuring power distribution, cooling, network/server racks, accessories, and project services. RiMatrix NG achieves the ultimate in IT infrastructure design when it comes to flexibility, reliability, and turnkey delivery. Ranging from standalone footprints to hyperscale deployments, RiMatrix NG is designed for any application.

Standalone Edge Solutions for Harsh Environments

Our full-spectrum of edge standalone solutions protect Edge Computing systems from foreign contaminants in harsh environments. These solutions are designed where space is limited, the physical environment is a top concern, and latency considerations cannot be understated. The modularity of these designs allow you to build as you grow, minimizing your initial investment.

Data Center/Edge Rooms for Semi-Controlled/Controlled Environments

When businesses may be running multiple critical IT applications simultaneously, the infrastructure required may need multiple IT network/server racks, the Data Center/Edge Room Designs are the perfect solution. Built to the same standards as hyperscale data center deployments, these solutions include aisle containment, temperature, humidity, and vandalism sensors, and both closed and open loop climate solutions.

Value-Added Services

Our engineering and service teams provide designs to give you the optimal balance of CAPEX and OPEX. Our installation team will assemble the integrated components needed to operate your critical IT equipment. With our individualized service agreements, you can ensure the protection of your operations to keep things running. Through careful analysis, we assess the efficiency, cost, sustainability, and scalability of these designs to optimize your facility.

TS IT Pro

TS IT Pro provides maximum airflow and efficient cable management options for quick and easy installation. With high density cooling and power distribution capability, the TS IT Pro is the next level infrastructure system.

Wallmount Cabinets

Three-part wallmounted housing allows for easy cable entry. A swivel integration to the center of the cabinet allows for optimal access to the enclosed electronics from either the front or rear.

CLIMATE CONTROL

Targeted, efficient cooling to protect and help to ensure a longer service life of vulnerable electronics in data center applications.

Liquid Cooling Package (LCP)

Whether the need be single or multi-rack deployment, organizations are turning to liquid-cooling solutions to eliminate the risk of IT failure with high density deployments at the Edge. Liquid cooling is one of the most efficient and cost-effective ways to remove heat. Rittal's direct expansion in-row liquid-cooling package (LCP DX) removes heat directly from one or two adjacent IT network/server cabinets. The LCP DX uses sealed cabinets to help ensure cold air is not wasted in spaces where it is not needed and all hot air is captured and removed.

SERVICE & SUPPORT

Industry-leading service for industry-leading products and solutions. Rittal is there to help boost your efficiency, minimize downtime, and grow your business. With more than 150 service locations and more than 1,000 technicians across the globe, our service teams can bring our industrial automation and IT expertise to you. Our product warranties, part procurement and service programs, and onsite assistance from industry-leading experts allow us to customize a solution based on what you need when you need it.
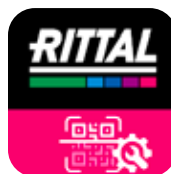
Parts and Service Center Support

Rittal North America offers its U.S. customers streamlined procurement of parts and service for enclosures and climate control products. Customers can order approved parts directly from Rittal, guaranteeing compatibility with pre-existing products and providing faster delivery times to customer locations.

System Analysis & Consultations

Unsure of where or how to start your journey toward an automated industrial or IT framework? Our expert technicians will conduct an enclosure, climate, or IT system analysis to help you identify areas of inefficiency and redundancy. Our industrial automation and data center experts can then create a customized specification tailored specifically to meet your business goals.

Rittal Roadshow & REV Truck

Let Rittal bring our world-renowned industrial automation and IT products to you. Rittal's REV Truck is a mobile showroom housing a full spectrum of our products and solutions. REV Truck appearances can be booked ahead of time based on availability and region by reaching out to your Rittal sales representative.

Rittal Mobile Apps

Designed for iOS and Android, Rittal's mobile apps help you stay connected no matter where you are in the world.

- Scan & Service app
- 3D CAD models app

Configuration made easy

1 Select a system.
Single enclosures, enclosure suites, different sizes.

2 Configure the enclosures.
Accessory selection, planning of cut-outs and hole drilling.

3 Create a CAD file.
Enormous time savings during planning by providing a CAD file of the complete configuration.

4 Submit an enquiry / order online.
Save the configuration, send an enquiry by e-mail, order directly online.

Enclosure Configuration Tool

Ready to upgrade your industrial enclosures?
Try our online configuration tool:

It provides simple planning of cut-outs and holes with real-time, 3D visualizations; automatic generation of order and manufacturing data; and EPLAN-Pro ready configurations for rapid processing.

Digital Resources

Rittal offers a number of enclosure, climate, IT, and accessory resources and calculators to help you pinpoint the product or solution for your application.

EXPLORE SOLUTIONS

Whether you're upgrading your enclosures or IT racks, evaluating your climate control options, or opening a new automated plant or data center, leverage Rittal's industrial automation and IT expertise to outfit your facilities.

Explore our solutions at **RITTAL.COM**

ENGINEERING SOLUTIONS FROM EPLAN AUTOMATION EXPERTISE FROM RITTAL

Perfectly coordinated software solutions, system technology, machinery and services deliver unique competitive advantages in panel building and switchgear manufacturing.
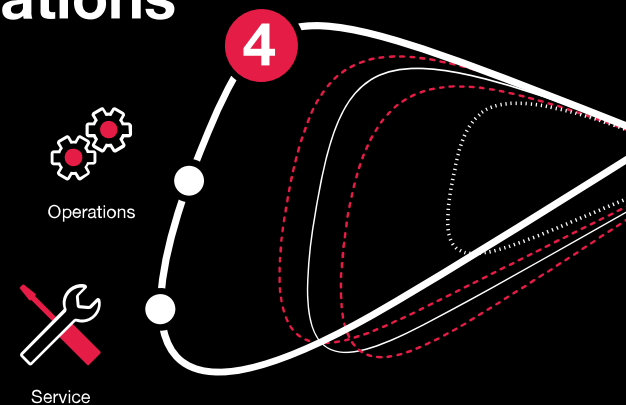
Sebastian Seitz
President of EPLAN and Cideon

The EPLAN platform links the company's high-performance solutions. All applications access the same functions and basic data, which significantly improves the quality of projects. Eliminating the need for manual data comparisons also makes processes faster, placing the focus back on essential engineering tasks.
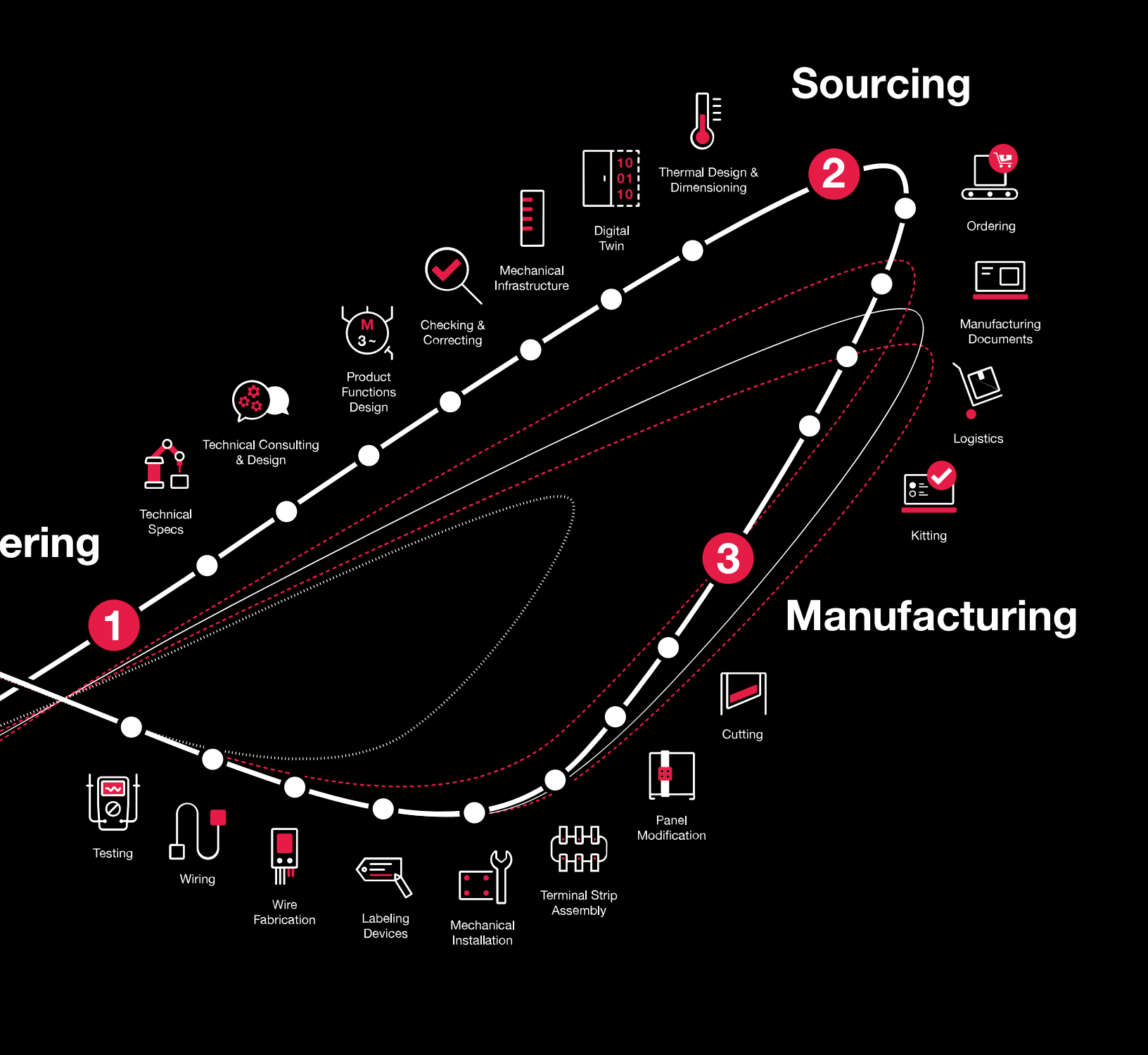
Rittal supplies all the automation support required to make enclosure assembly quicker, easier, more accurate and more reproducible. When combined with EPLAN solutions, this makes it possible to link all encloure assembly steps to create a highly efficient and digitally seamless automated process. Rittal and EPLAN can supply all the necessary software tools, machinery and equipment.

Operations

Engine

4

Operations

Service

Sourcing

Thermal Design & Dimensioning

Digital Twin

Ordering

Mechanical Infrastructure

Manufacturing Documents

Checking & Correcting

Logistics

Product Functions Design

Technical Consulting & Design

Kitting

Technical Specs

2

3

1

ering

Manufacturing

Cutting

Panel Modification

Testing

Wiring

Wire Fabrication

Labeling Devices

Mechanical Installation

Terminal Strip Assembly

Rittal – The System.

Faster – better – everywhere.

■ **Enclosures**
■ **Power Distribution**
■ **Climate Control**
■ **IT Infrastructure**
■ **Software & Services**

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ENCLOSURES POWER DISTRIBUTION CLIMATE CONTROL IT INFRASTRUCTURE SOFTWARE & SERVICES

RITTAL

FRIEDHELM **L O H** GROUP