



Sustainable Building Management

Project & building management systems and
customized software from a single source





Building Management powered by Eckelmann – Solutions from a single source

What began decades ago with simple heat recovery in supermarkets is now a comprehensive, future-proof building management system (BMS). We offer our customers the complete range of modern building automation – efficient, intelligent and flexible.

Implementation is carried out using our own hardware made in Germany or selected premium products from leading manufacturers. This is complemented by excellent project management and powerful software based on decades of experience that can be flexibly adapted to individual requirements.



Full-service provider for Automation, Digitalization & Customized Software Solutions

The Eckelmann Group is a leading system partner for automation & digitalization and has a strong network of eight locations and strategic partnerships in Europe, China and the USA.

As a partner in digital transformation, we harness the potential of digitalization in production and building technology environments in a targeted manner and create sustainable competitive advantages for our customers.

Curiosity and enthusiasm for technology drive us forward. We combine pragmatic, goal-oriented thinking with high standards of care, quality and reliability.

Our range of services includes customized automation solutions for numerous industries – from agriculture and food to refrigeration and building management technology to medical technology.

Your advantages

- Consulting
- Engineering Services
- Electronic controls
(BMS/Refrigeration technology/Machines)
- Smart services
- Installation and commissioning worldwide
- Customer service and lifecycle support
- Cost savings
- Maximum data security with
Virtus Tectum Grid
- IoT-based system





Virtus Tectum Grid (VTG) – the Eckelmann Building IoT Network of the future

Cost reduction & energy efficiency

Eckelmann VTG reduces energy consumption through intelligent control of heating, ventilation, air conditioning (HVAC) and lighting. This significantly lowers operating costs and sustainably reduces the carbon footprint.

Efficient operational management

Central monitoring and control of all building services systems ensures smooth operations. Automated processes and early fault detection minimize downtime and optimize maintenance and servicing.

Increased security

By integrating access controls, alarm systems and video surveillance, Eckelmann VTG increases the security of people, facilities and buildings – reliably and comprehensively.

More convenience for users

Individually controllable temperature, lighting and air quality concepts increase user comfort and create optimal working conditions. This has a positive effect on satisfaction and productivity.

Central transparency & control

All relevant data and control functions are clearly bundled in one place. This creates maximum transparency, facilitates decision-making and enables precise control of all processes.

Sustainability & environmental awareness

Through energy-optimized operating strategies and the integration of renewable energies, Eckelmann VTG supports sustainable building management – an important contribution to corporate environmental responsibility.

Flexibility & scalability

Eckelmann VTG adapts to individual requirements and grows with the needs of the company. Expansions are possible at any time – without costly new investments.

Legal certainty

The system supports compliance with legal requirements and relevant standards in the areas of energy efficiency and building safety. This minimizes risks and increases legal certainty.

Data-driven optimization

The continuous collection and analysis of operating data allows trends, deviations and optimization potential to be identified at an early stage. This enables proactive action and continuous improvement.

Sustainable value enhancement

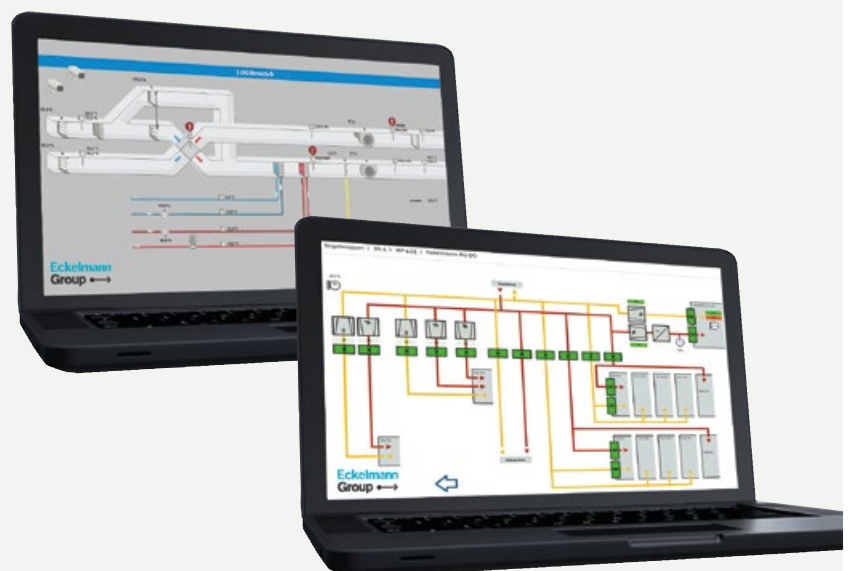
An intelligently managed building retains its value in the long term or even increases it. Investing in Eckelmann VTG therefore pays off not only operationally, but also economically.



Virtus Tectum Grid

bundles all data, processes,
and applications in your
building.

With visualization, operation,
reporting, and analysis, you can
maintain an overview at all
times – efficiently, transparently
and future-proof.



Virtus Tectum Grid – Building Intelligence

Building IoT

Digital transformation is fundamentally changing the building industry. With our expertise in Industry 4.0, you can actively shape your Building 4.0. Our building management platform helps you overcome traditional building automation structures and create real added value. From planning to operation, we use innovative concepts, solutions and products to ensure efficient processes, cost-effective operation and a high level of user comfort. Building intelligence is the answer to the growing complexity of future-oriented buildings.

Facility management: Flexible, smart, future-proof

Our Virtus Tectum Grid building management system brings building automation into the digital age. Open interfaces and connectivity with all common protocols enable flexible, smart building management – for new buildings as well as existing ones. Simple engineering and a superimposed system for all applications ensure efficiency and convenience.

Your advantages at a glance:

- Optimizing life cycle costs: One system for all applications
- Flexible & future-proof: Open interfaces for all common protocols
- Easy integration: new and existing buildings thanks to IoT-based and classic communication
- Secure & updatable: IT architecture-compliant upgrades and updates
- Reduce costs: Less hardware thanks to intelligent automation

Virtus Tectum Grid building management system

Virtus Tectum Grid enables the simple connection of field devices and systems – from serial or Ethernet interfaces to classic current, voltage, or resistance transmitters. At the heart of the system is the IoT framework, in which all data is normalized to a uniform format. Each data point is defined only once and is then available to the entire system – for control, visualization, and other applications. This means that all data is always structured, uniform and accessible across the network.

System architecture of the building management system

VTG's architecture enables easy migration of classic IP-based building automation. This allows you to secure your investments while laying the foundation for smart, future-proof IoT-based building management solutions.

Cyber security in the Virtus Tectum Grid

Cybersecurity is crucial in smart buildings. Virtus Tectum Grid ensures the secure use of building and user data through consistent, barrier-free connectivity. Based on the principle of "secure by default," VTG offers a comprehensive range of easily configurable security mechanisms:

- Secure authentication
- Identity infrastructure and PKI integration
- Role-based access control
- API authorization and encryption of all communications
- User account management, e.g., password assignment

This ensures that your building is protected efficiently without complicating operations.

Building Automation at the highest level

Central Data Integration

Virtus Tectum Grid allows all data from systems and trades to be consolidated, normalized, and visualized and managed independently of protocol or manufacturer. VTG can be operated on servers, in the cloud, or via a web browser (HTML5) – with the focus on the user and their operational processes. Alarm forwarding via email or SMS can be easily automated.

Open Interfaces & Drivers

VTG supports all common protocols such as BACnet, KNX, Modbus, DALI, SMI, EnOcean, SNMP, MQTT, REST and over 300 drivers, including third-party providers.

Intuitive 2D & 3D Visualization

Ready-made system diagrams, standard symbols and importable floor plan views enable rapid implementation. All recorded data can be customized and displayed in 2D or 3D.

Create individual dashboards for individual trades or distributed properties – for display, evaluation and comparison.

Trends & Energy Monitoring

Temperatures, operating hours, and other data points are continuously recorded and visualized. Data can be exported or forwarded to external locations.

Timer Schedules & Central Control

Switch-on and switch-off times as well as higher-level events such as public holidays are managed and coordinated centrally – for efficient and safe operation.



Consulting



Engineering



Hardware



Software
Solutions



Digital
Twin



From Alarms to IoT: everything under control

Alarm console

Alarms are clearly displayed in a list and can be acknowledged directly. Various filter and sort functions enable quick searching and prioritization.

Building automation – Building IoT Controller

We use project-specific DDC controllers from various manufacturers and also offer Eckelmann's own controllers such as the E°EXC89e: modular, powerful and with a high interface density. Thanks to its modular design, the system can be expanded with additional interfaces at any time. Our GLT3010/5010 controller series has been in successful use for 20 years and is continuously being further developed – made by Eckelmann, made in Germany.

Harnessing digital potential

Virtus Tectum Grid (VTG) allows you to increase the efficiency and flexibility of your building:

- Demand-oriented infrastructure increases user comfort, well-being, and productivity
- Open IoT-based VTG management platform enables flexible room concepts during ongoing operation
- Improved building performance and increased market appeal through additional applications and usage scenarios



Lifecycle
Management



Control Cabinet
Construction



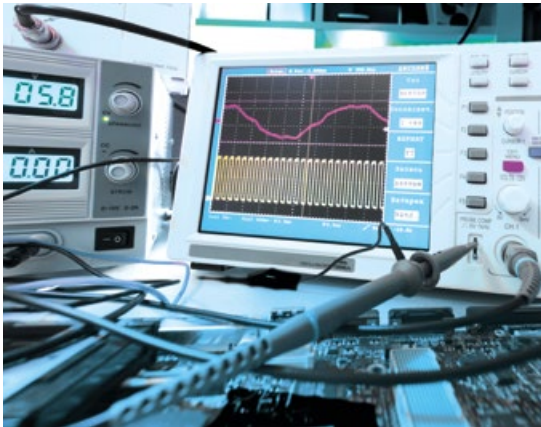
Training



Worldwide
Service



System Design with vision: knowledge – solution – sustainability



Hardware Engineering

We plan your building management system (BMS) according to your needs right from the start. We work with you to analyze and design the optimal solution based on your tender documents.

We define the required hardware scope, the necessary licenses, and the associated services.

Based on these values, we create a transparent, tailored offer.

Eckelmann Controls – the mastermind for your building



VTG-E°EXC89es/GLT Series/Selected controllers

Powerful VTG controllers with Ethernet interface offer maximum flexibility.

They support OPC UA and all common protocols for seamless integration into your building management system.

Eckelmann I/O Modules – compact & unique



VTG-E°UBM Series

The I/O modules of the Eckelmann UBM series are ideal for PLC, motion, and CNC applications, as well as for BMS systems in combination with the EXC89 control series.

Thanks to their compact design, they save valuable space in the control cabinet, while the modular structure significantly simplifies wiring.

Control Cabinet – more important than you



Control Cabinet

Designed to meet the high demands of electrical engineering, our control cabinet offers enough space for all components, yet remains compact and space-saving. Efficient ventilation ensures a long service life and reliable operation.

Facility Management Journey

VTG Software Tools – your key to multifunctionality



VTG Supervisor

State-of-the-art software licenses, drivers, graphics, and Web BMS libraries enable flexible, multifunctional solutions for our customers. All relevant protocols such as BACnet, KNX, Modbus and many more are supported.

Additional tools:

VTG-SMA-5-YEAR

VTG-DEVICE-Series

VTG-OPCUTIL-Series

Digital Engineering for maximum efficiency



Software Engineering

Based on customer requirements from project tenders or on an individual service package created by Eckelmann, the required functionalities are parameterized via standard modules at the control level and data points are assigned accordingly on the VTG control system. If the standard is not sufficient, new functionalities can be programmed to suit individual customer requirements.

Visualization & Dashboards

Creation & dynamization of system graphics, floor plans, overviews, and dashboards with consumption values from the systems.

High point of the journey: Commissioning



System check & Function

During commissioning, all BMS hardware and software components are tested for communication and functionality. All connected data points and systems are checked for correct assignment and functionality.

Documentation & Archiving

A complete test report of all functions is generated. Software, initial values, and test results are securely archived to ensure maximum transparency and traceability.

Investment protection through Maintenance



System review & Control

Regular maintenance ensures that your system functions correctly. Software and control values are compared with the initial values or the target values determined during operation.

Documentation & Transparency

The current system status is documented and the software version is archived. You then receive a complete maintenance log that creates transparency and protects the value of your investment.



References – Security, reliability, partnership

Security and cooperation

Eckelmann's cutting-edge technology provides significant support to the US armed forces in Europe, particularly in supplying troops with essential goods and food.

For many years, the Defense Commissary Agency has relied on our expertise and reliability in equipping its supermarkets.

Our **innovative refrigeration solutions** ensure consistent storage and optimal food quality, while our comprehensive building management ensures smooth operation and efficient administration of the entire infrastructure. Thanks to state-of-the-art technology and sophisticated monitoring systems, we serve supermarkets across Europe. This enables us to respond quickly to problems and ensure a continuous supply to the US armed forces and their families.

The long-standing partnership between the **Defense Commissary Agency** and Eckelmann underscores the trust placed in our solutions. It forms an important pillar of logistical support for the troops and ensures that they are always reliably supplied.

Support for critical infrastructure

Supplying the population with fresh food is a key social responsibility. Supermarkets play a crucial role in providing high-quality products on a daily basis.

For decades, Eckelmann has been equipping supermarkets, which are part of Europe's critical infrastructure, with state-of-the-art control systems for refrigeration systems and building management. These systems not only ensure optimal food storage, but also guarantee smooth and efficient operation of the stores.

Many well-known retail companies rely on our expertise and innovation. Through continuous optimization of refrigeration and building technology, we help supermarkets maintain their high standards of freshness, quality, and sustainability.

In this way, we make a significant contribution to the reliable supply of the population – an indispensable building block for the well-being of our society.

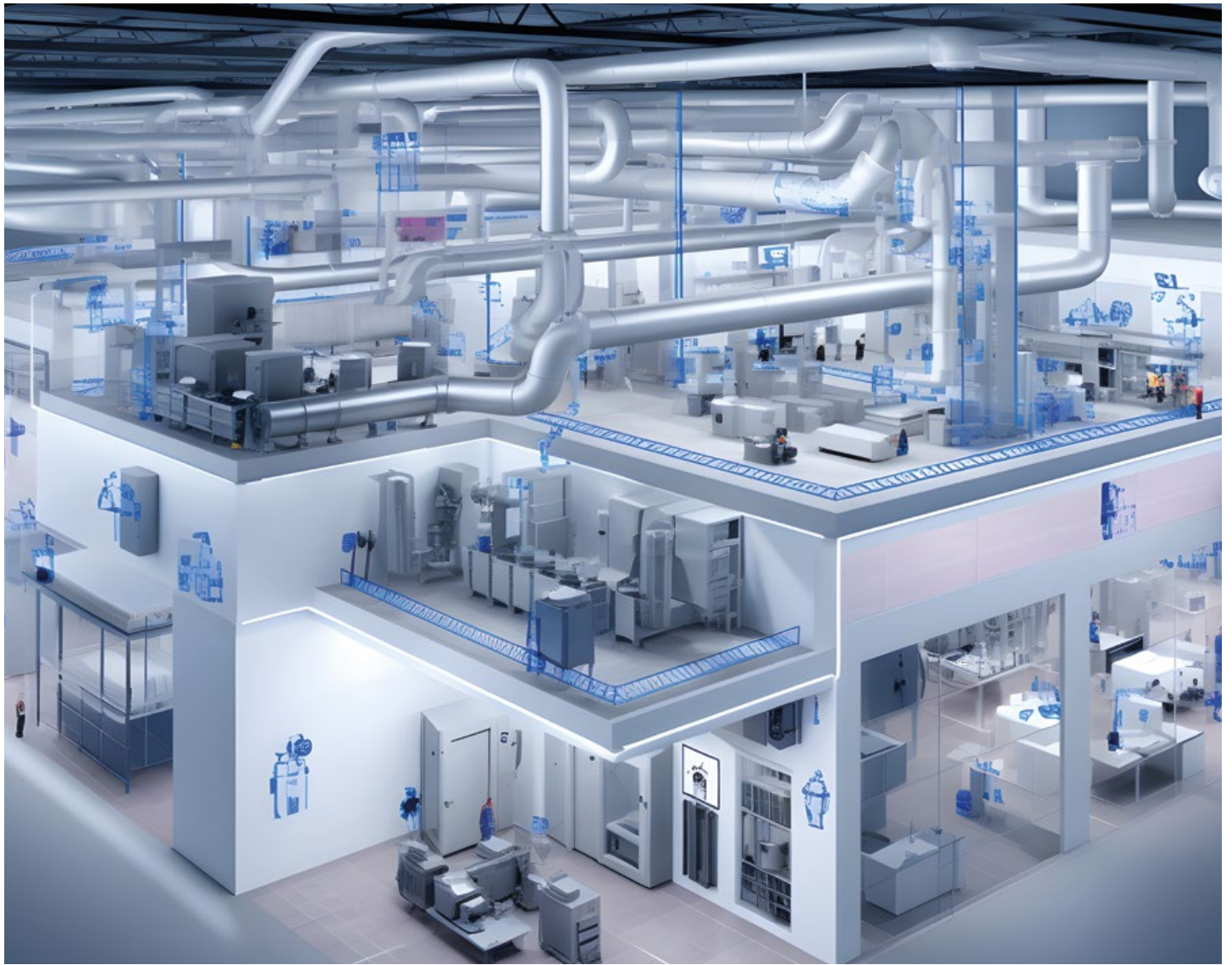
Medical care of the highest standard

An efficient healthcare system requires modern, reliable infrastructure. High-tech operating rooms, efficiently organized intensive care units, and well-equipped research laboratories are crucial for the smooth operation of hospitals.

Renowned institutions such as **Charité Berlin** – Campus Virchow Klinikum and the **University Hospital of RWTH Aachen** have been relying on innovative BMS solutions from Eckelmann for decades. Together, they are continuously modernizing and optimizing their building infrastructure. Thanks to Eckelmann's technologies, all systems – from lighting and surveillance to energy supply – function safely, efficiently, and reliably, even in the event of an emergency power failure. This increases safety, comfort, and efficiency for patients as well as medical and technical staff.

With tailor-made solutions, Eckelmann helps clinics stay at the cutting edge of technology and secure their leading role in medical care and research.

These partnerships impressively demonstrate how innovative building technology can sustainably improve the quality and reliability of medical care.



Unique selling points of Eckelmann BMS Technology

- Made in Germany
- One stop shop
- Future-proof technology
- Easy maintenance
- High level of user expertise
- Highly qualified engineers
- High production standard
- Reliable delivery & fast response time

These features make Eckelmann BMS technology a unique solution for modern building automation – powerful, flexible and durable.

In dialogue with customers and partners

Eckelmann offers comprehensive solutions for refrigeration technology, building automation and facility management. With our E*LDS and Virtus LINE product ranges, we cover the control, operation, networking and monitoring of refrigeration systems, cold rooms and refrigerated display cabinets, as well as building automation and facility management – efficient, future-proof and technologically advanced.

Virtus Tectum Grid – Certifications

The Eckelmann Group is, of course, ISO 9001 certified.
In addition, we demonstrate our quality management and certifications with, for example:



About us

Since 1977, innovation, flexibility, and customer focus have been among our strengths. We develop tailor-made solutions for industry, especially where standard solutions are not enough. In doing so, we combine years of in-depth industry experience with the latest knowledge of innovative digital technologies.

Our vision is to create a world without waste of energy, raw materials, and labor. We want to work with you today to pave the way for tomorrow.



Sites & partnerships – national & international
480 + employees



Contact us.

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