KNX Gateways

Versatile Networking for Smart Building Automation.

arcus-eds KNX

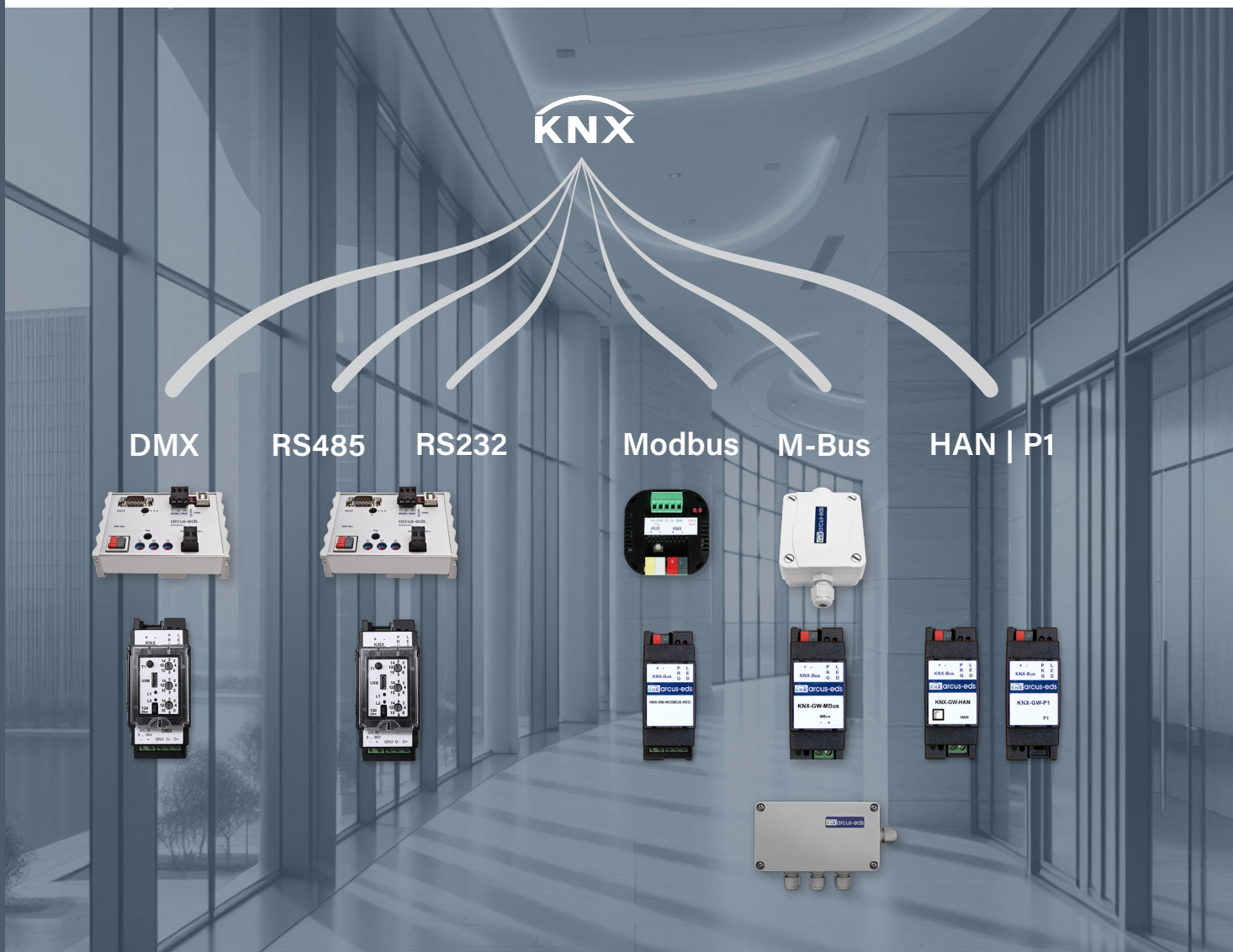
Versatile Networking with KNX Gateways

In the world of building automation, the integration and control of different systems are crucial. KNX gateways play a central role in connecting various communication protocols within a single KNX system. This whitepaper provides a detailed overview of how KNX gateways simplify system integration, reduce operating costs, and enhance user experience.

Integration of Non-KNX Devices

KNX is a proven system for building automation, offering centralized control and management of lighting, heating, ventilation, and security systems. It provides flexibility, energy efficiency, and scalability for comprehensive and efficient building automation. However, KNX users often face the challenge of integrating devices that are not directly compatible with KNX for specific applications. The difficulty lies in connecting a wide variety of devices into the existing KNX system to enable centralized management and control.

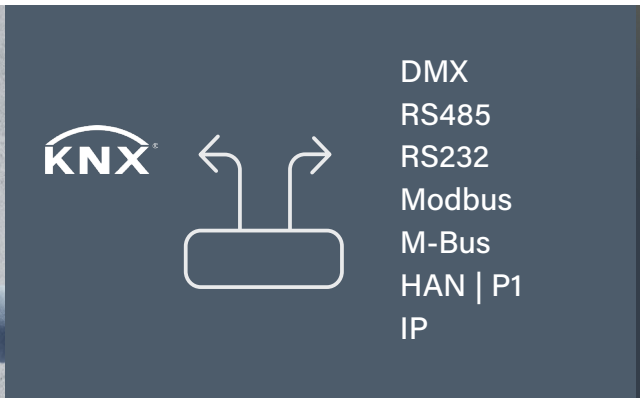
If a device does not support KNX, it's worth checking if it has an interface for other established building automation systems like **DMX**, **RS232**, **RS485**, **Modbus**, **M-Bus**, or **P1**. This is where KNX gateways come into play, allowing different systems and protocols to be integrated, ensuring centralized KNX control.



Connecting Systems through Intelligent Interfaces

Our KNX gateways offer comprehensive integration options for various systems. Here is an overview of the supported system categories, including specific application examples:

- **Lighting Control with DMX**
  Integrate lighting systems in event spaces for precise control and automation.
- **Communication Protocols RS232 / RS485**
  Devices such as garage doors, blinds, or awnings with RS232 or RS485 interfaces can be integrated into the KNX system.
- **Measuring and Control Systems M-Bus or Modbus**
  Integrate measuring devices and sensors such as energy meters, heat meters or air conditioning units into your KNX system to enable centralized control and monitoring.
- **Home and Energy Management with HAN or P1**
  Link your KNX system with home automation networks and smart energy measurement systems to monitor and optimize energy consumption.
- **Network Devices IP**
  Our KNX IP gateway connects ETS with the KNX bus, enables KNXnet/IP tunneling, and provides detailed telegram logging for centralized management of your KNX systems via LAN/WLAN.



Benefits of System Integration with KNX Gateways

1. **System Optimization**: KNX gateways enhance communication and control between different technologies and protocols.
2. **Automation and Reduced Operating Costs:** KNX gateways integrate various systems into a centralized KNX network. This central control enables automation and optimization of the systems, saving energy and reducing operating costs.
3. **Increased User-Friendliness:** Centralized control and easy customization of systems through KNX gateways enhance the user experience. Users can control and adjust various systems from a single interface.
4. **Flexibility and Expandability:** KNX gateways offer the flexibility to integrate various systems and support future expansions. This allows the system to adapt to changing requirements and new technologies

Practical Applications

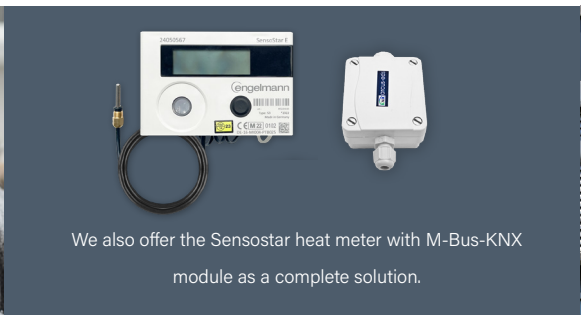
1. Project Example – M-Bus Integration for Heat Quantity Management

Use Case: In multi-family homes with central heating systems, high energy costs and inefficient energy management should be optimized through management via the KNX bus.

Technical Solution: The integration of heat meters with M-Bus interface combined with the KNX M-Bus gateway into a KNX system allows consumption data to be accessed directly on a PC. This data can be collected monthly and used for consumption analysis to identify usage patterns and increase energy efficiency. Through this integration, setpoint temperatures in different zones can be adjusted. This enables more precise control of heating costs and leads to a reduction in energy consumption.

Benefits:

- Data Accessibility: Simplified access to consumption data for reporting/analysis.
- Energy Optimization: Automatic adjustments of setpoint temperatures help optimize energy consumption.
- Cost Savings: Regular data analyses can identify potential savings.



We also offer the Sensostar heat meter with M-Bus-KNX module as a complete solution.

2. Project Example – RS485 Integration for Shutter Control

Application: A single-family home equipped with a KNX system is to be expanded with automated blind control.

Technical Solution: The control of blinds or roller shutters can be managed centrally through the KNX system. By using our KNX RS232/RS485 gateway to integrate RS485-compatible devices, the awnings can be controlled directly via a KNX touch panel. Additionally, intelligent sensors can enable automatic adjustment of the blinds based on environmental conditions such as temperature, sunlight, and wind speed. This not only increases comfort but also protects the home and its occupants from adverse weather conditions.

Benefits:

- Automatic Adjustment: Blinds dynamically respond to changing weather conditions
- Easy Control: User-friendly management via a KNX touch panel
- Weather Protection: Minimizes the risk of weather-related damage.

Conclusion and Recommendations

Our KNX gateways enable the expansion of your KNX system through the straightforward integration of devices without KNX connection. They support centralized control and management, help save energy, and reduce operating costs.

In our application examples, we have demonstrated how KNX gateways can be used for centralized management of roller shutter control and heat quantity management. Furthermore, KNX gateways are applicable in many areas such as lighting, ventilation, and energy management, providing solutions for numerous other applications.

Contact and Consultation

Find your flexible KNX solution. Our KNX gateways and all technical information are available on our website.

KNX Gateways: https://www.arcus-eds.de/en/knx-gateways
Smart Metering: https://www.arcus-eds.de/en/knx-smart-metering

Additionally, we are happy to provide personal consultation by phone or email.

Your Arcus-EDS Team

Arcus-EDS GmbH
Rigaer Str. 88
10247 Berlin

Email: sales@arcus-eds.de
Tel.: +49(0)30/25933914
Fax: +49(0)30/25933915

www.arcus-eds.de
arcus-eds electronic design services KNX

Impressum

Editor: Arcus-EDS GmbH, Rigaer Str. 88, 10247 Berlin

©Arcus-EDS GmbH

Responsible for the contents: Hjalmar Hevers, Sascha Bergmann

All information is supplied without liability. Technical specifications and prices can be subject to change.

September 2024

Liability

The choice of the devices and the assessment of their suitability for a specified purpose lie solely in the responsability of the buyer. Arcus-EDS does not take any liability or warranty for their suitability. Product specifications in catalogues and data sheets do not represent the assurance of certain properties, but derive from experience values and measurements. A liability of Arcus-EDS for damages caused by incorrect operation/projecting or malfunction of devices is excluded. The operator/project developer has to make sure that incorrect operation, planning errors and malfunctions cannot cause subsequent damages.

Safety Regulations

Attention! Installation and mounting must be carried out by a qualified electrician.
The buyer/operator of the facility has to make sure that all relevant safety regulations, issued by VDE, TÜV and the responsible energy suppliers are respected. There is no warranty for defects and damages caused by improper use of the devices or by noncompliance with the operating manuals.

Warranty

We take over guarantees as required by law.
Please contact us if malfunctions occur. In this case, please send the device including a description of the error to the company's address named below.

Registerd Trademarks

The CE trademark is a curb market sign that exclusively directs to autorities and does not include any assurance of product properties.

CE

Registered trademark of the Konnex Association.

KNX

Image Rights

S. 4 tashka2000/stock.adobe.com, U. J. Alexander/stock.adobe.com, S. 5 REDPIXEL/stock.adobe.com

Some of the images used in this brochure were created using artificial intelligence (AI). These images are intended for illustration and enhancement of the presentation. We place great importance on transparency and want to ensure that our readers are informed about this.