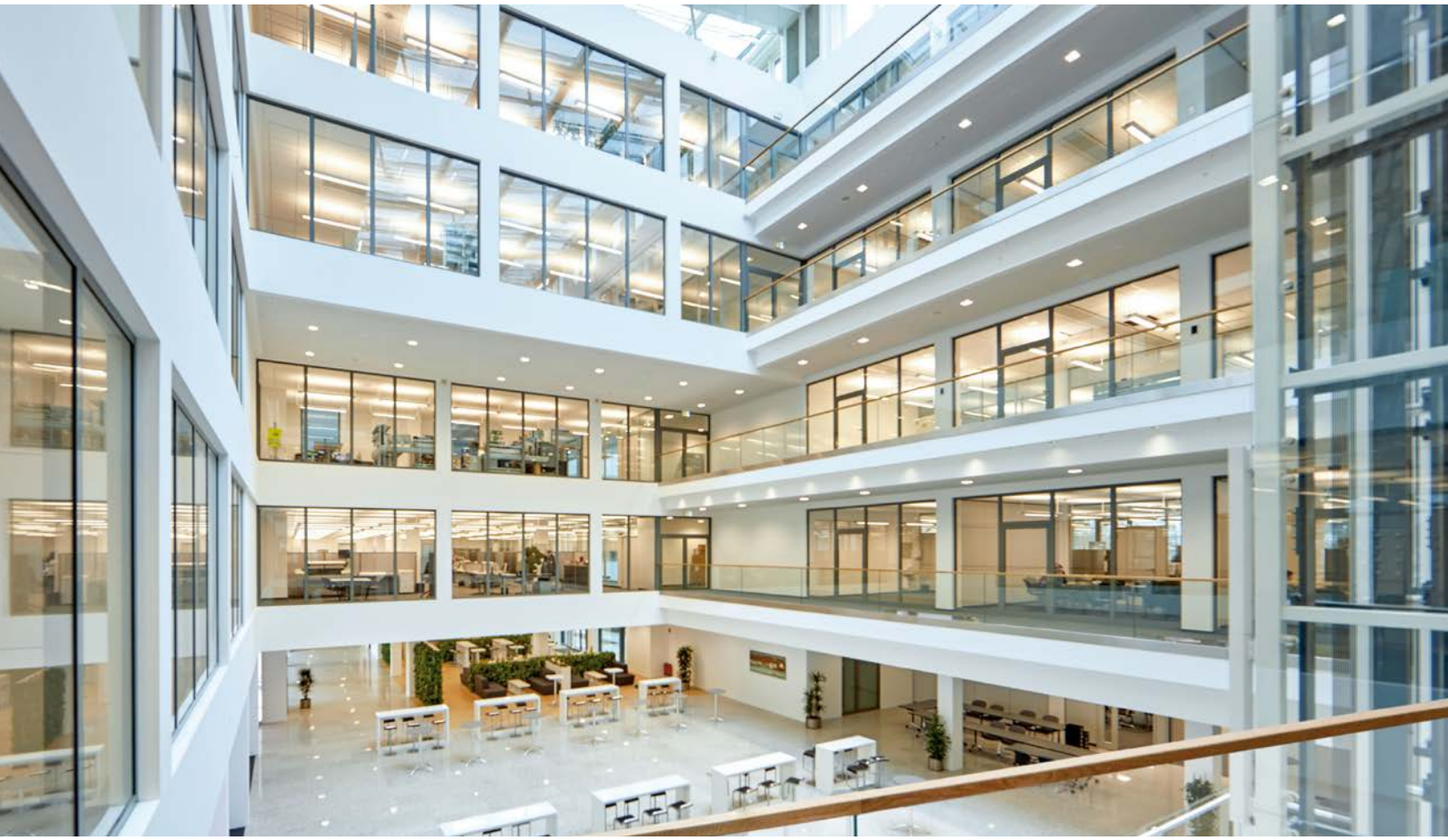


Connectors in Catan building automation controller

# A building automation controller that supports the All Electric Society

**Highlights**

- The Catan product family is a comprehensive building control system with many interfaces for networking and extending building functions
- When designing Catan, Phoenix Contact wanted to ensure reliable connections and user-friendly features for building automation engineers
- Catan is a good example of how different areas of a company can collaborate to share expertise and develop a complex product
- As buildings become smarter and more networked, the Catan system will help improve efficiencies and support the All Electric Society

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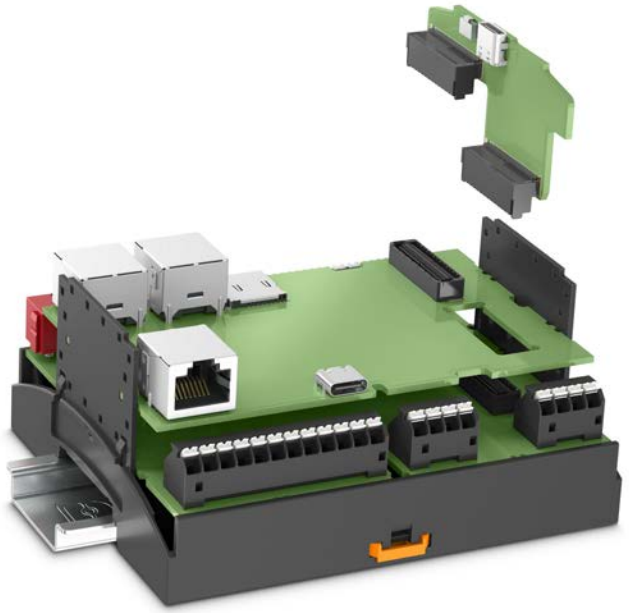
# Comprehensive control for smart buildings

**Smart buildings integrate features like climate control, lighting control, air quality sensors, energy monitoring, and much more. Phoenix Contact recently introduced the Catan product family, which offers an ideal solution for the needs of the building automation market. Through its expertise in networking, automation, and electrification, Phoenix Contact works with customers to empower smart and sustainable cities for future generations.**

## Reliability and ease for building automation engineers

Network integration – the integration of a robust network within a building – is a major factor in intelligent buildings. Phoenix Contact recently introduced the Catan family, a highly functional building control system with many interfaces for networking and extending building functions. Catan can play a critical role in networking buildings. (See Sidebar for more details on the Catan controller.)

When designing Catan, Phoenix Contact wanted to ensure that the controller had the most reliable connections and that the end product would be user-friendly for building automation professionals. ■



**Connectors in the Catan building automation solution**

## Combined expertise and collaboration

A closer look at the product details reveals that the Phoenix Contact terminal block and connector portfolio contributes to the development of building automation systems. Product innovations such as these are made possible by the combined expertise of different areas within Phoenix Contact.

***The right housing***

The Catan product family uses a specific version of the BC Modular series, a housing system that can be combined individually. The DIN rail-mount housings for use with touch protection cover provide a high degree of flexibility in terms of design. The products were deliberately designed with a uniform standard width of six HP. This ensures a high degree of scalability and facilitates planning, which is particularly beneficial when doing the calculations for a complex building involving a high level of investment.

***Board-to-board connection***

The Catan board-to-board connection is based on the FP 0.8 series connectors. One advantage of this series is that several connectors can be mounted on a PCB, because the ScaleX contact system provides high-tolerance

**continued →**

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compensation during mating. Here, two horizontal male connector headers are mounted on a PCB and are inserted orthogonally, i.e., vertically, into the vertical female connector headers, which are located on two PCBs arranged one above the other (Figure 1). This PCB construction was made possible by the FP 0.8 series.

The stack height and the high wipe length, along with the space-saving connection with a pitch of 0.8 mm and a small footprint, make it the ideal choice. Featuring gold-plated contacts, the FP 0.8 series enables long-term stable signal transmission with high currents and can transmit high data rates of up to 52 Gbps. The optional shielding provides increased protection against electromagnetic interference.

The housing base protects the contacts during mounting, and the high inclination tolerance ensures maximum connection reliability in the mounting process. The process times for device mounting are very low, even when working with large quantities.

***PCB terminal blocks for the connection level***

The connection level uses Push-in PCB terminal blocks, which are suitable for high temperatures, so they are reflow solderable (THR). The SPTA-THR 1.5 Push-in PCB terminal block with a 3.81-mm pitch and 45-degree wire interface provides maximum convenience for the installer in the limited wiring space of a control cabinet. Push-in Technology enables the direct insertion of rigid cables without tools (Figure 2).

Catan extension modules are robustly connected via the SPTA-THR 1.5 PCB terminal block using Single Pair Ethernet (SPE). The simple topology offers the possibility of decentralization while maintaining a high-performance connection.



**Catan DOR6 UI8 relay module with the new SPT-THR 2.5 with 45-degree conductor outlet and currents up to 24 A**

The new SPTA-THR 2.5 PCB terminal block, which also has a 45-degree wire interface, fits neatly into the overall concept of the Catan product family. The PCB terminal block with

## The Catan building automation solution



**Catan is a feature-rich building control system with many interfaces for networking and extending building functions. It supports all common fieldbus standards in building automation, in particular KNX. Catan has a native KNX connection and combines two devices in one: the controller and the KNX IP/TP router. Other supported protocols include RS-485 Modbus, DALI MM, DMX, and BIoT protocols (MQTT).**

**The Emalytics/Niagara framework ensures the professional networking of all automation and monitoring functions. It effortlessly handles the integration of driver blocks and extensions, as well as the wide-ranging visualization and analysis functions. The standardized product family design in a DIN rail format of six HP simplifies planning. It also makes it suitable for use in room automation with the usual touch protection cover and for use in primary systems for heating, ventilation, and cooling applications.**

**Clear marking of the terminal points and functions means that users can easily maintain an overview when working with this versatile solution. The digitalization of data supports this, and the user can access data via a QR code unique to the device.**

**The Catan control panel's 2.4-inch display ensures complete flexibility in installation, maintenance, and servicing (Figure 3). The control panel is a universal tool for everyone involved in building automation. Technicians can check the installation and set operating parameters; system integrators can fine-tune the programming and test the application, while operators can control and adjust the system parameters.** ■

**continued →**

5-mm pitch enables the problem-free marshalling of high currents up to 24 A with a connection cross-section of up to 12 AWG for rigid conductors.

***Further connection technology with RJ45, KNX, and USB-C***

The three RJ45 jacks for the Gbps Ethernet interfaces and the distinctive red-black KNX twisted pair interface are additional products from the Phoenix Contact portfolio. The RJ45 jacks and the corresponding pin strip for the KNX interface are also THR-capable. In addition, it has various versions of the USB-C data connectors. This allows connection of different adapters as communication protocol converters, such as for connecting EnOcean wireless technology. ■

## Conclusion: Reliable networks add value

The Catan building automation system is a good example of how the experience gained by different areas of the company and collaboration between these areas can create the perfect customer solution. The use of so many components, such as connectors, highlights the complexity of building automation systems. This solution, in turn, adds value for the energy transition.

The vision of an All Electric Society is based on the use of renewable energies through the creation of intelligent and networked systems. Coordinating energy supply and consumption requires networking all systems across industries through sector coupling. Catan offers an ideal solution for the building automation sector.

**More information**

www.phoenixcontact.com/en-us/industries/building-automation ■



### About Phoenix Contact

Since 1923, Phoenix Contact has created products to connect, distribute, and control power and data flows. Our products are found in many industrial markets, including energy, infrastructure, process, factory automation, and e-mobility. Together with our customers, we are empowering a smart and sustainable world for future generations.

For more information about Phoenix Contact or its products, visit **www.phoenixcontact.com**, call technical service at **800-322-3225**, or email **us-info@phoenixcontact.com**.