

TROX



FEEL IT
IN THE AIR

NEW

Air management has never been easier than with TROX Ox



MAJOR CHALLENGES ARE *IN THE AIR*

Whether schools, public buildings or office complexes, the demands placed on buildings and their technology have steadily increased in recent years. They pose ever greater challenges for everyone involved in planning, construction and operation. The focus is on five key topics.

THE 5 KEY TOPICS

BUILDINGS ARE BECOMING MORE COMPLEX

Modern buildings must be adaptable in order to meet rapidly changing requirements and technological developments. This requires innovative solutions that make it easy to change the structure and use of the building.

REGULATIONS AND STANDARDS ARE BECOMING STRICTER

Compliance with local, national and international building regulations is becoming increasingly important which makes construction projects more complex. The best example is the German Building Energy Act (GEG) 2024, which stipulates a minimum level of automation for non-residential buildings. In addition, there are increasing requirements for data protection and security standards in the IT sector.



Scan for more information on the German Buildings Energy Act

COST EFFICIENCY IS BECOMING INCREASINGLY IMPORTANT

In a challenging competitive environment, keeping to tight budgets while maintaining high quality standards increases the pressure to ensure efficient planning, construction and operating processes.

SUSTAINABILITY IS BECOMING INCREASINGLY RELEVANT

Buildings play a central role in CO2 emissions. In order to reduce the ecological footprint and fulfil environmental requirements, buildings must become more sustainable. This includes the integration of energy-efficient solutions and environmentally friendly operation.

DIGITALISATION IS BECOMING STANDARD

Digitalisation increases efficiency and reduces errors. However, it also requires comprehensive adaptation in order to fully utilise the potential of new, rapidly developing technologies.

TAKE A DEEP BREATH AND DISCOVER: *TROX Ox*

TROX Ox makes it easy to fulfil the diverse requirements for safety, flexibility and comfort in buildings. This pioneering solution combines all relevant ventilation components and applications in a standardised, digitally networked system for faster planning, simpler installation, optimised control and sustainably efficient operation over the entire project duration and the entire life cycle of buildings.

Welcome to TROX Ox.
The AIR-IN-ONE SYSTEM

Made in Germany.
Developed in-house by TROX

TROX Ox



STANDARDISED. DIGITAL. NETWORKED.

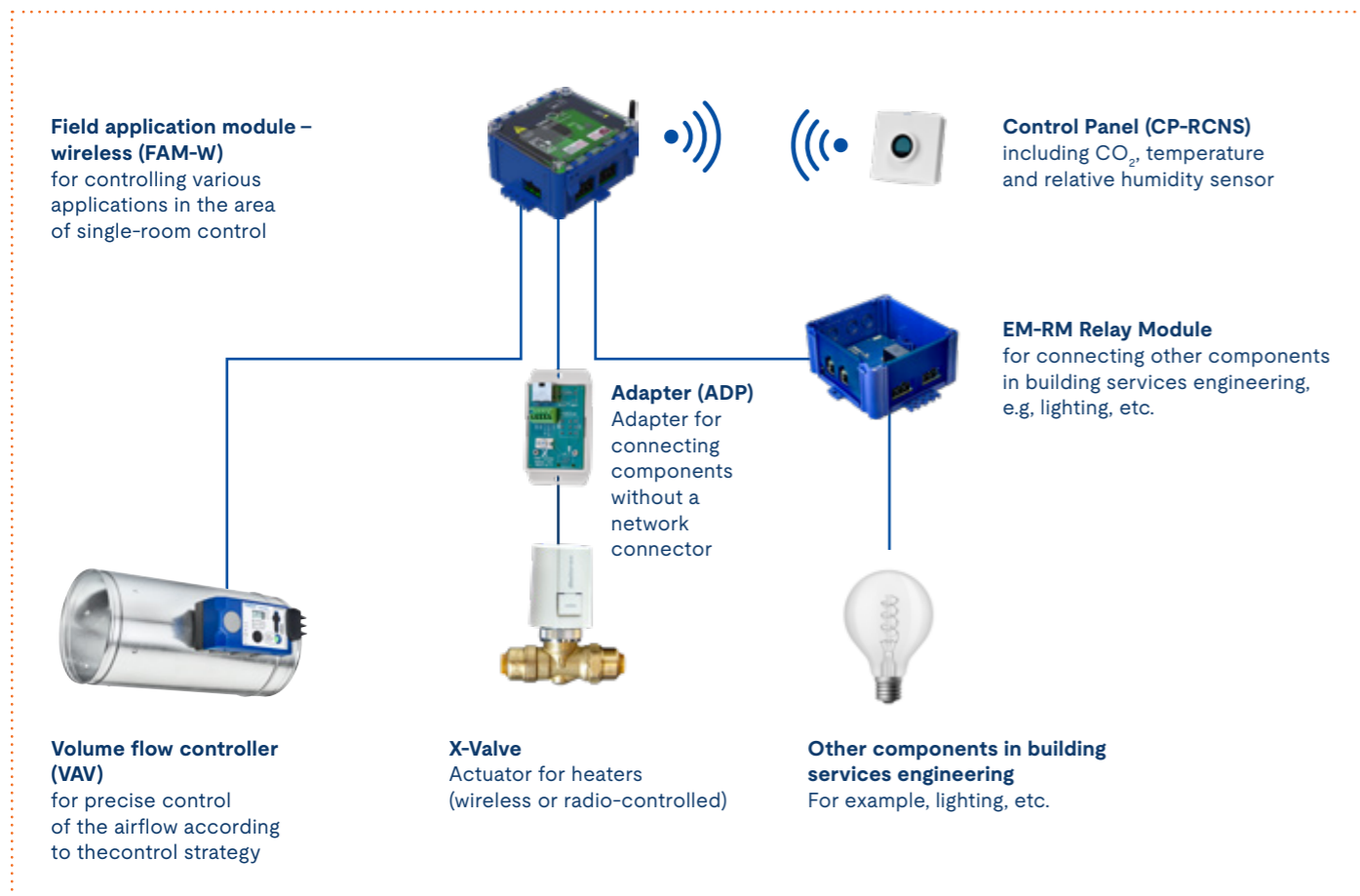
THE ELEMENTS OF THE AIR-IN-ONE SYSTEM.

TROX Ox is a sophisticated overall system with hardware and software on one standardised platform – consistently made in Germany and developed in-house by TROX for the highest quality standards, reliability and durability. All elements of the digitally networked solution are coordinated and communicate seamlessly – providing integrated, intelligent air management: wired, wireless or as a combination of both.

TROXNETCOM



TROX Ox WIRELESS



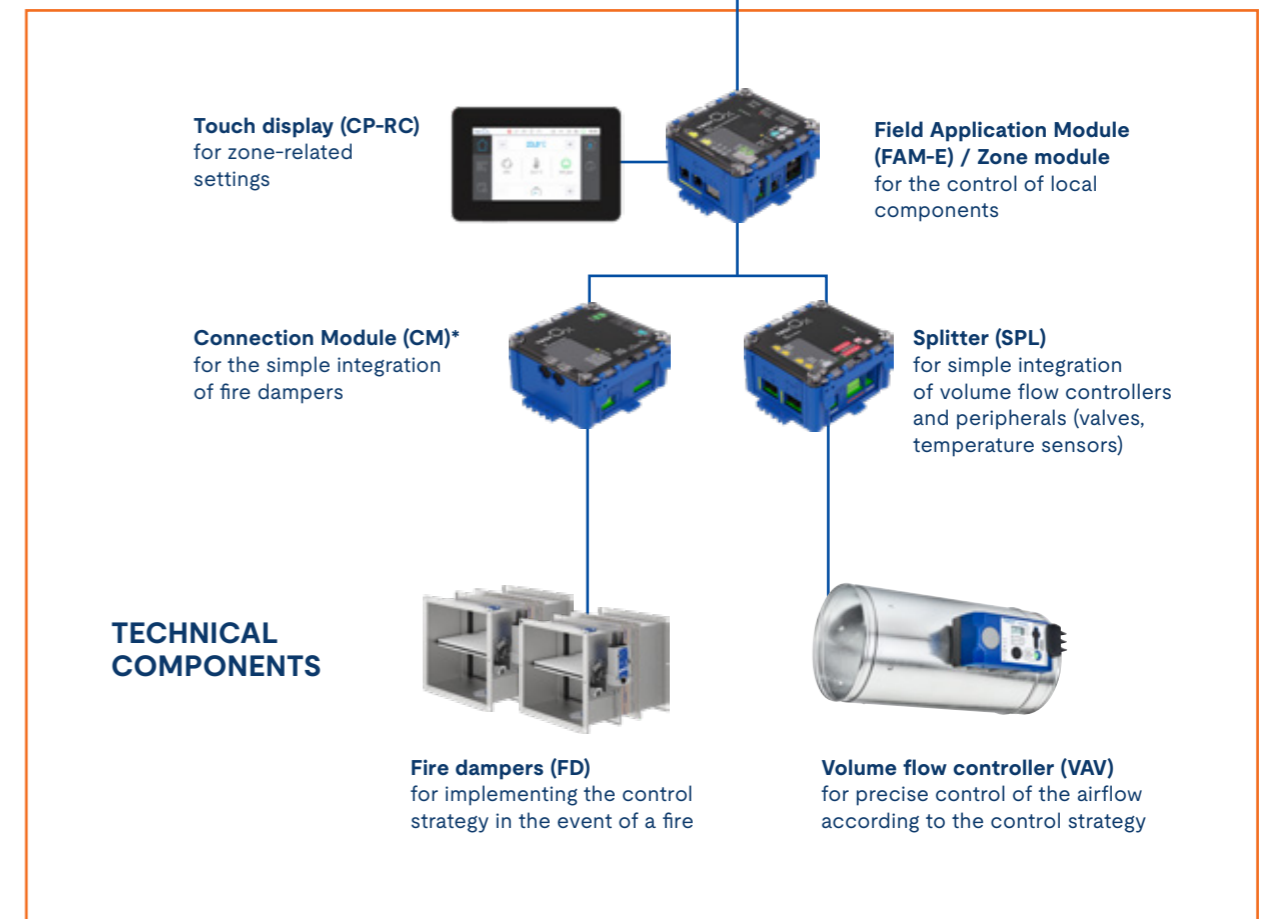
SOFTWARE AND DIGITAL TOOLS



CONTROL AND COMMUNICATION TECHNOLOGY



TROX Ox WIRED



*expected to be available end 2026



AIR IN ALL PHASES WITH TROX Ox

YOUR BENEFITS FROM PLANNING *TO OPERATION*

Each phase of a project comes with its own challenges. TROX Ox provides freedom and new possibilities across all phases. Discover the benefits of the system, from initial design to installation and operation.



BETTER, FASTER PLANNING

TROX Ox accelerates and simplifies the entire planning process – from planning and calculation to tendering. The digitally networked system enables a simple connection of ventilation solutions to the management and control equipment (MCE). The option of combining wired and wireless connections ensures maximum planning freedom and adaptability to a wide variety of building structures. Here, TROX Ox focuses on the functionality, not on the number of data points. By reducing the number of interfaces between applications and involved trades, high-performance systems can be easily designed and implemented.



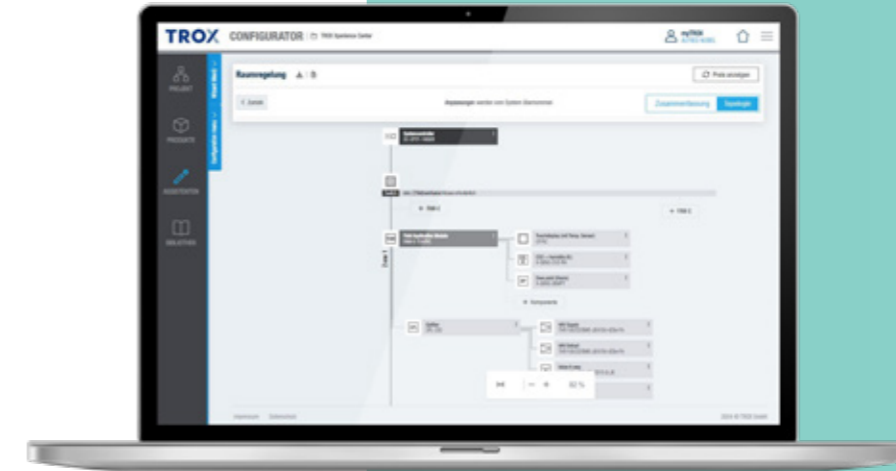
SIMPLE, SAFE INSTALLATION

TROX Ox uses a sophisticated plug-and-play system to ensure that everything fits together perfectly – and that all components can be easily connected using standardised bus systems. Both wired and wireless versions are available and can be flexibly combined. Wireless technology enables wireless communication between room devices, sensors and the system controllers, eliminating the need for extensive cabling. This makes the installation of the system simple, efficient, safe and much faster. Even with scarce personnel resources and in times of shortage of skilled labour, projects can be realised in a timely manner as well as cost-efficiently – with TROX Ox.



MORE EFFICIENT AND FLEXIBLE OPERATION

TROX Ox guarantees maximum transparency in air management. Operators can view the open system at any time, connect it to other systems or make adjustments. Thanks to the intuitive operating concept, optimising control, regulation or monitoring is very easy. This ensures independent operation, maximum sustainability and efficiency and low maintenance costs in modern air management.



EASY. ONLINE. PLANNING.

TROX CONFIGURATOR

The basis of TROX Ox is the TROX CONFIGURATOR. It is the central design software. Not just for TROX Ox System solutions, but for all TROX components, products and systems. A configuration wizard supports selection and design as a virtual assistant. The self-explanatory user interface makes configuration quite simple.

As an online configurator, it is always up-to-date. The TROX CONFIGURATOR enables an initial design with products, prices and specification texts. This first draft can be further developed and refined later.

If TROX Ox systems are planned with the TROX CONFIGURATOR, a large part of the planning information, such as the building structure, is used for operation. The commissioning process is also significantly shortened using the planning data, as the information from the planning phase can be used.

In addition to the visualisation of the system solution, the TROX CONFIGURATOR enables easy, interactive exchange of information between all project participants during the entire planning process.



ADVANTAGES AT A GLANCE

- > Comprehensive design tool that is directly accessible without additional software installations – online and always up-to-date
- > Secure, project-related registration and use via the myTROX customer portal
- > Virtual assistance with the selection and configuration of products
- > Use from the initial concept phase to final design planning
- > Consistent and user-friendly interface with award-winning design
- > Consistent data use for tenders, quotations, commissioning and monitoring
- > Documentation and standardised tender specifications immediately available
- > Clear system visualisation for simple representation of the system topology
- > Effective support of digital planning processes



EASY. SAFE. INSTALLATION

PLUG AND PLAY

The TROX Ox system is based on an intelligent plug-and-play approach. All components interlock seamlessly and are connected via standardised bus systems and radio protocols. This concept reduces the number of necessary interfaces and makes installation considerably easier. At the same time, it minimises potential sources of error and speeds up commissioning.

FEWER AND PERFECTLY MATCHED COMPONENTS

The system elements configured for air management are installed in the rooms and zones of the building. These include the TROX Ox components, which are responsible for the control and regulation processes, as well as the ventilation components such as volume flow controllers and fire dampers.

QUICK AND EASY CONNECTION

Thanks to standardised interfaces and uniform bus systems, the elements can be connected quickly and easily, which significantly reduces installation time and increases system reliability. Automatic recognition of the components saves even more time during commissioning. These are all decisive advantages in view of the current shortage of skilled labour, which is making qualified installations more difficult.

SAVINGS IN TIME AND EFFORT

By using a shared infrastructure for functions such as room control or fire protection, the system layout is simplified, thereby further reducing the installation effort.



MORE EFFICIENT CONTROL AND OPERATION

MANAGEMENT DASHBOARD

The Management Dashboard is the intuitive user interface of TROX Ox for easy configuration, monitoring, operation, customisation and maintenance of the system. Access is possible via a digital web server on any PC or via a special display.

Quick on-site configuration.

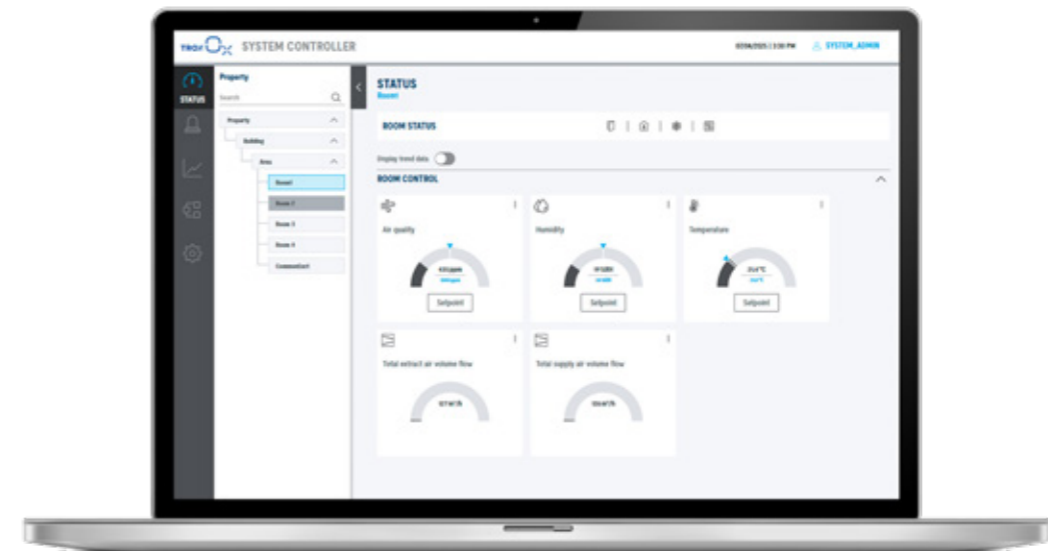
The TROX Configurator is available as a digital copy in the Management Dashboard. Based on this, the control system can be configured on site – much faster than with the time-consuming programming of conventional MCE solutions.

Long-term efficiency guaranteed.

With the commissioning of TROX Ox, you can rely on an intelligently networked system in which all components are continuously monitored and regulated by the system controller, ensuring a reliable, efficient and secure operation.

Easy optimisation and immediate response.

The Management Dashboard ensures maximum transparency, offering constant insight into the system to, for example, integrate it with other solutions or make independent adjustments. In the event of alarms, error messages or anomalies during operation, the Dashboard helps to quickly analyse and rectify the cause.



THE SYSTEM LAYOUT OF TROX O_x

THE MODULES AND THEIR FUNCTIONS

MANAGEMENT AND CONTROL EQUIPMENT (MBE) & X-CUBE CONNECTION

Interface

A single interface is sufficient for all air handling functions between the TROX O_x system and the management and control equipment (MCE) via BACnet.

Ventilation unit

TROX ventilation units can also be seamlessly integrated into the system. The X-CUBEs can transmit all important information to the TROX O_x system via a connection.

BUILDING MANAGEMENT

System Controller (SC or SC-CP)

As a central interface, the system controller connects the field level (zones and rooms) with the management and control equipment (MBE) and natively integrates TROX X-CUBE devices – via Modbus for X2C2 and via MQTT for X-CUBE X1/2 (Beckhoff).

Switch (SWI)

Communication in the TROX O_x system is based on a network structure. The switches serve as nodes and connection points with the field devices in the rooms and zones of a building.

FIELD LEVEL

Field Application Module (FAM-E and FAM-W)

The FAM-E can be used to connect and control local components in zones and building sections, such as fire dampers or volume flow controllers. Local operating devices such as the touch display (CP-RC) can also be integrated with the FAM-E.

CP-RC / CP-RCNS

Room control units for controlling zone-related settings. CP-RC (wired) with touch display. CP-RCNS wireless; including CO₂, temperature and relative humidity sensor.

CONNECTION MODULES

Connection Module (CM)

Each connection module enables the simple connection of up to 2 fire dampers. It monitors the limit switches and the status of the fire dampers.

Splitter (SPL)

The splitter facilitates the straightforward connection of components for room control, such as volume flow controllers, sensors and actuators, including temperature sensors or heating/cooling valves.

Relay Module (EM-RM)

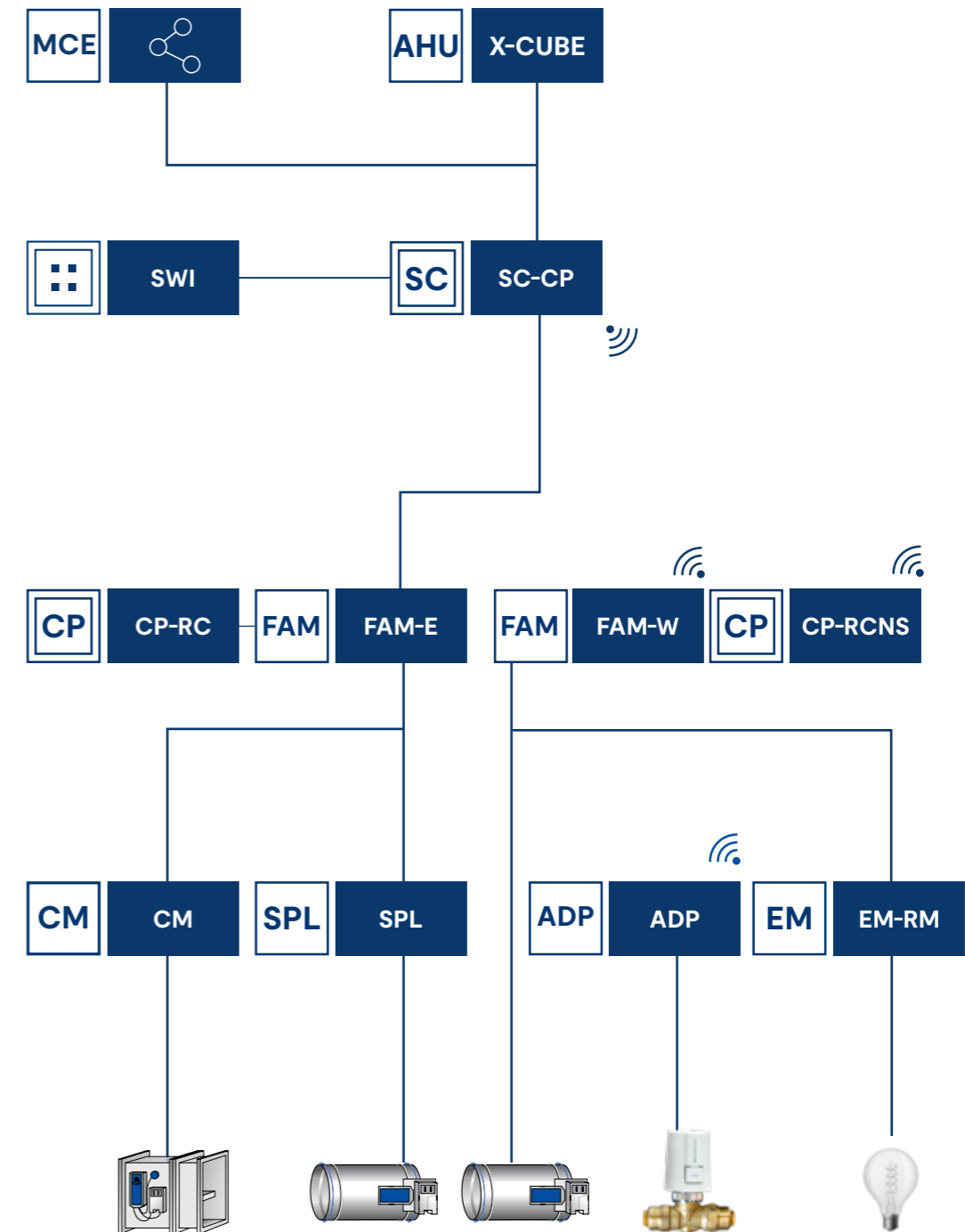
for connecting other components in building services engineering, e.g. lighting

Adapter (ADP)

RJ45 connection to other connection types

COMPONENTS

The connected components such as volume flow controllers, fire dampers and actuators implement the control strategy precisely.



TROX Ox – SIZING EXAMPLE

THE PERFECT SOLUTION FOR EVERY TYPE OF BUILDING

TROX Ox is a system platform that is available in both a wired and a wireless variant, thus allowing the system to offer maximum flexibility.

Wired or wireless – to suit the building situation

The wired version is particularly suitable for new builds. Fixed installation allows for efficient integration of lines in the early construction process, paving the way for a robust and durable infrastructure. The wireless version is particularly recommended for modernisation projects in existing buildings. Wireless communication between room controllers, system controllers and wall sensors significantly reduces installation effort, as no additional cabling is required. Both variants can also be flexibly combined. This allows wired and wireless components to be optimally combined depending on the structural conditions.

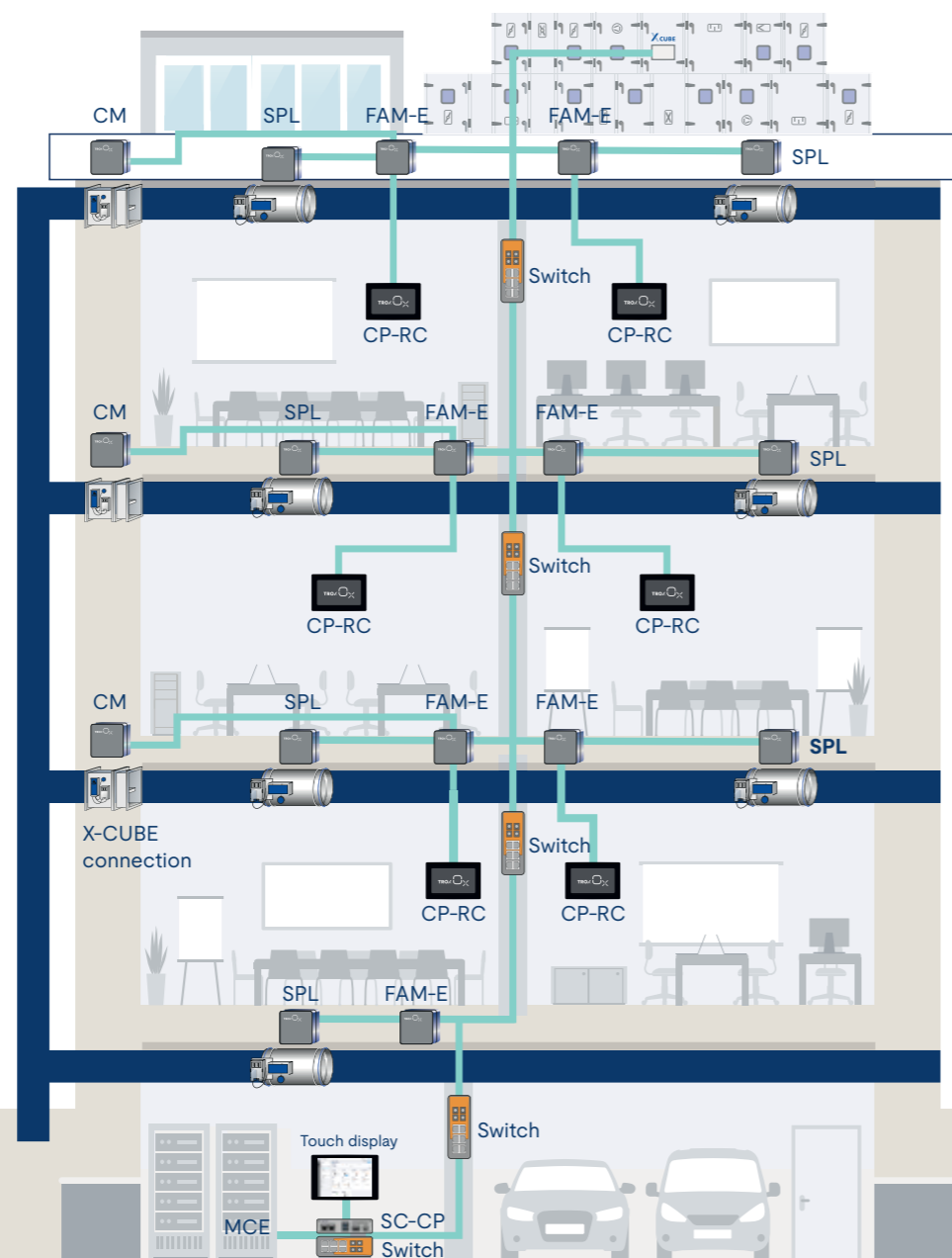
SIMPLY SMART FOR GREATER EFFICIENCY

The sizing example shown is based on a new build and illustrates the combination of room control and fire protection with TROX Ox across multiple zones. The integrated solution is ideal for objects in which fire dampers have to be planned for each zone.

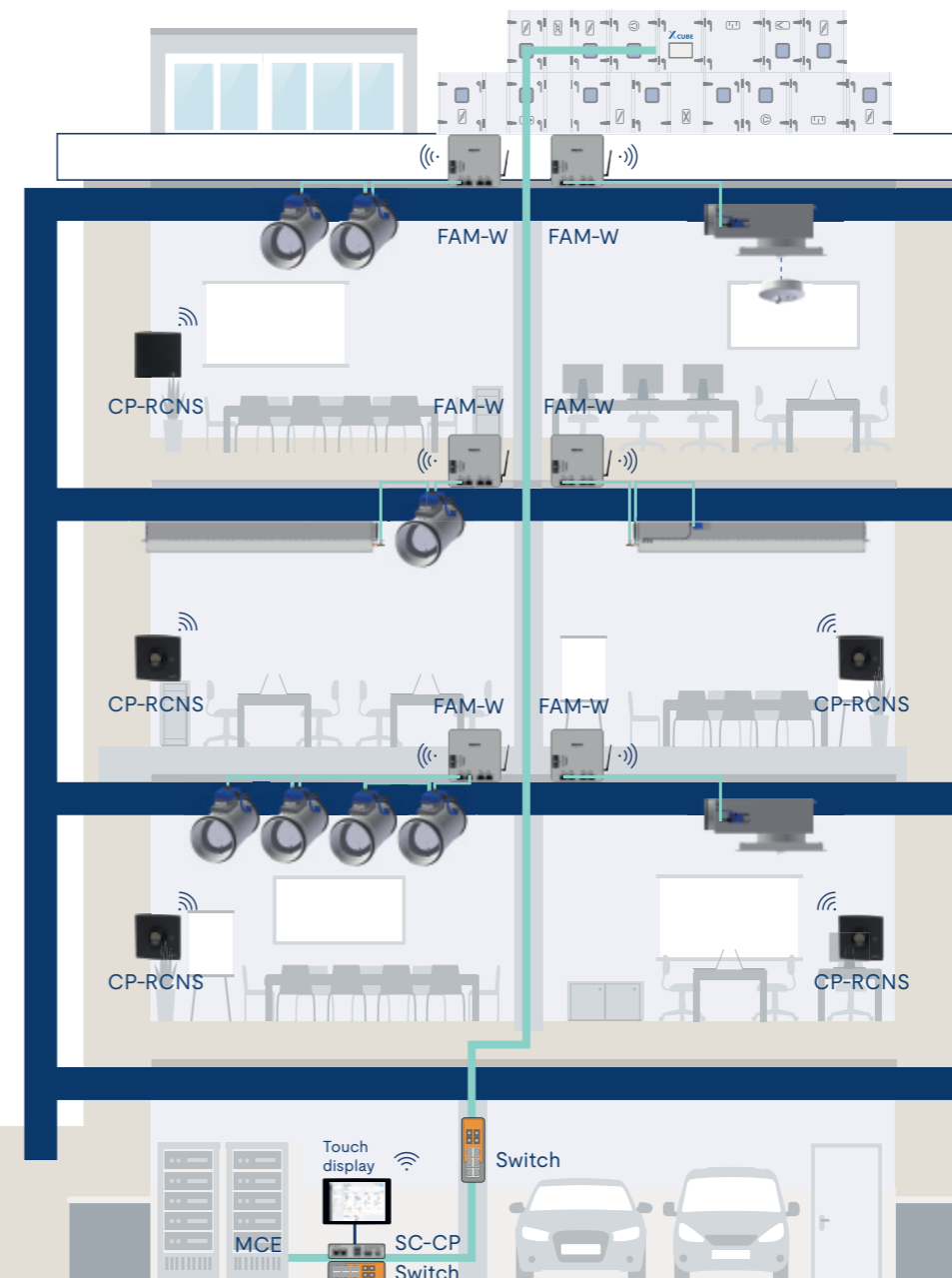
In addition, no power supply units are required when using 230V AC actuators. Commissioning is via the same user-friendly interface as for a pure fire damper system.

Scalability and future-proofing

As a highly efficient platform, TROX Ox can easily be scaled to up to 125 zones – for future-proof, high-performance and efficient building management.



Ideal for new builds:
Wired solution



WIRELESS:
COMMISSIONING
AND OPERATION
VIA APP POSSIBLE



**Ideal for existing buildings /
building renovation:**
Radio solution

TROX O_x IN COMPARISON

THE BENEFITS COMPARED TO TRADITIONAL SOLUTIONS



BUILDING WITH TROX O _x	BUILDING WITHOUT MCE	BUILDING WITH MCE
Planning and installation		
<p>⊕ Holistic and harmonised HVAC planning possible right from the start</p>	<p>⊖ High need for coordination between involved trades – even within the HVAC components</p>	<p>⊖ Complex planning of the MCE</p>
		<p>⊖ High need for coordination between involved trades – even within the HVAC components</p>
		<p>⊖ Higher costs due to many interfaces</p>
Operation		
<p>⊕ Harmonised and coordinated operation of the involved HVAC trades</p>	<p>⊖ No harmonised operation, e.g. ventilation technology and fire dampers</p>	<p>⊖ Specialists with complex expertise required for operation</p>
<p>⊕ Simple transfer of HVAC information via modern HMI panels</p>	<p>⊖ No central monitoring of technical building equipment.</p>	
<p>⊕ Centralised monitoring of HVAC components at no additional cost</p>	<p>⊖ Less comfort in the building due to lack of monitoring (CO₂/ temperature)</p>	
<p>⊕ Only one central interface to the MCE for reduced effort and costs, minimisation of error sources and simplified maintenance</p>	<p>⊖ Longer waiting times in the event of an error, longer unnoticed error states</p>	
<p>⊕ Alarm management and the resulting ability to act in the event of errors</p>		
<p>⊕ Secure communication through encrypted protocols and compliance with applicable IT guidelines and standards</p>		

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DISCOVER TROX Ox
FOR YOUR PROJECT!



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