



**Technology by robatherm.**

the air handling company



robatherm





# Technology by robatherm.

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Internal quality check of an AHU.

**TrueIndividual.  
As individual  
as you are.**

We anticipate the needs and requirements of our customers and implement them quickly and effectively in direct dialog. Thanks to an unparalleled number of device options, TrueIndividual stands for the unlimited implementation of competent planning.





**OUR CLAIM:  
WE FIND THE  
SOLUTION THAT  
BEST MEETS YOUR  
REQUIREMENTS.**



# Quality knows no limits.

## **Infinitely scalability**

Due to their modular design, TrueIndividual series air handling units offer unlimited flexibility as proven by features such as freely selectable casing cross-sections for all airflows from 1,000 m<sup>3</sup>/h.





The wide range of unit sizes is yet another indication of robatherm's flexibility.

### Customized and standardized

Individual product solutions and standardized work processes are not necessarily contradictions – on the contrary. Automated production facilities combined with the know-how of our employees enable us to manufacture individualized, high-quality AHUs.



Individually designed according to the structural requirements: AHU with a vertical L-shaped airflow.





## The requirements determine the design.

The individuality and flexibility of TrueIndividual can be seen in the wide selection of casing shapes. Thanks to their modular design, robatherm AHUs adapt perfectly to the structural building conditions.



AHU positioned on the wall to save space.





### Unit shapes adapted to the room geometries

Due to the flexibility of the casing shape, solutions can be implemented that are tailored to your requirements.



AHU built around an existing support column.



Equipment room worth seeing: AHUs coated jet black.

## The first impression: individual

Our production facilities enable us to fulfill individual customer requirements on time, quickly and in premium quality. This way, solutions with extraordinary details are created that make TrueIndividual unique and distinctive.





### Unit in unit

An internal access passage offers ideal conditions for maintaining large AHUs. Two or more AHUs integrated into one unit casing offer conditions for convenient and weather-protected maintenance as well as integration of other projects.



Several AHUs integrated into one large casing.



Color: signal blue.



Color: gray aluminum.



Color: traffic red.





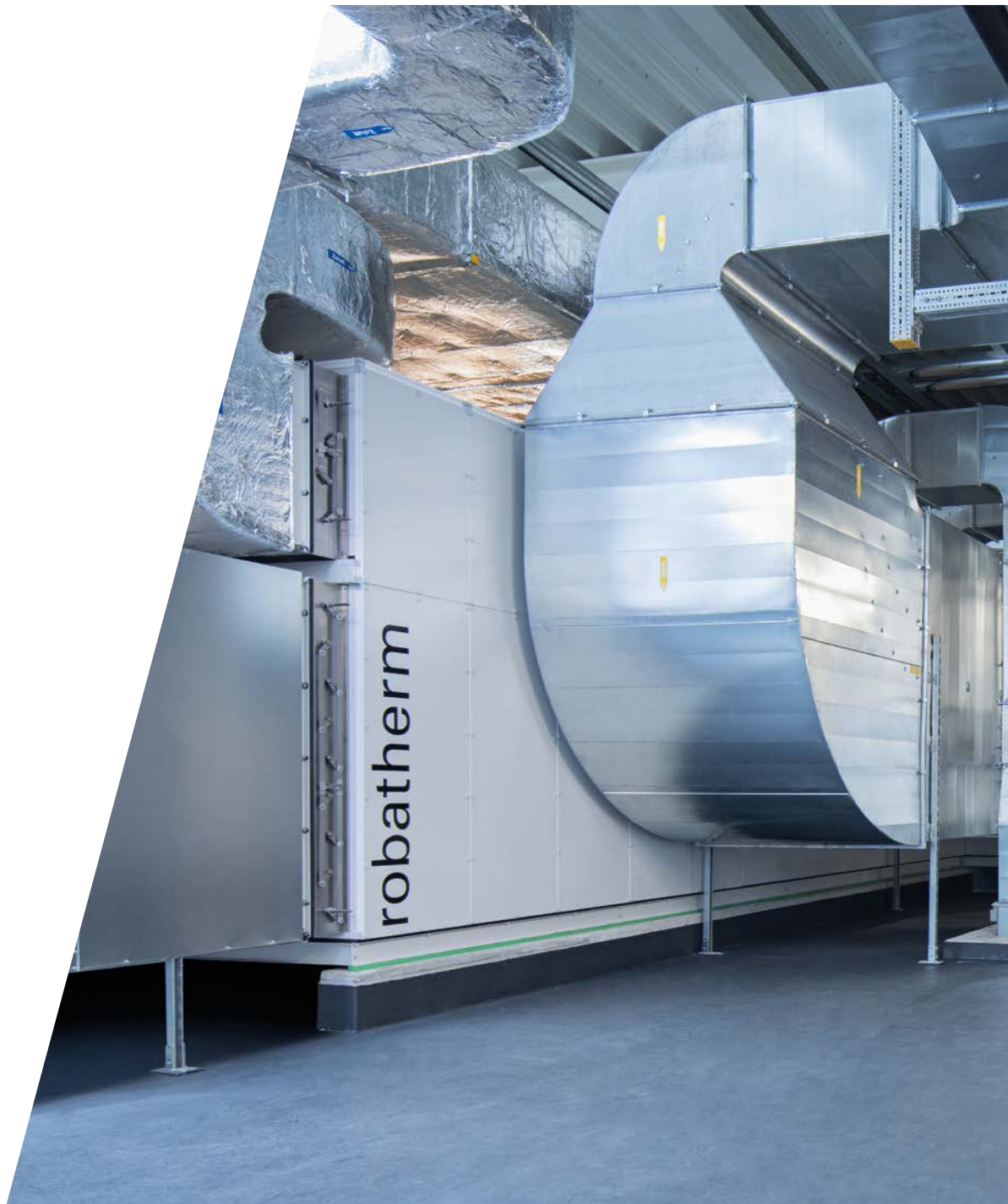


Color: graphite gray.

### **Architecturally perfectly integrated**

Air quality is more important than ever before. The AHUs required for this purpose should match the building as closely as possible. Thanks to the great range of available RAL colors, AHUs from robatherm visually enhance the architecture and create a harmonious unit with the building.





**TrueIndividual – for  
every application:  
uniquely individual.**



AHUs for clean rooms.

Do you need a weatherproof AHU for outdoors or an indoor version for applications with increased hygiene requirements such as in clean rooms and clinics, for a swimming pool with a high risk of corrosion or would you like an AHU with an antimicrobial coating as additional protection? robatherm: the right partner at your side.





Installation of several AHUs at robatherm for a factory acceptance test.

## Powerful, efficient and up-to-date.

### **Certified quality**

Those who promise quality must be judged by quality. Independent test institutes prove what our customers confirm in practice: we keep the promises we make. AHUs from robatherm comply with relevant safety regulations and guidelines.

### **Sustainable thanks to efficient AHUs**

Energy consumption, economy and sustainability are inextricably linked to each other. With our AHU solutions, you can make an effective contribution towards climate change mitigation today.





The performance data are documented in detail.

# **TrueCompact. Premium quality in the compact class.**

Designed for everyday applications and delivered ready for connection - robatherm TrueCompact saves time and effort. The compact ventilation device of the TrueCompact series convinces with highest energy efficiency at compact external dimensions.





Compact and efficient – TrueCompact.

### TrueCompact at a glance

- Indoor and weatherproof outdoor design
- Airflows of up to 11,500 m<sup>3</sup>/h
- Delivered ready for connection (turnkey)
- With counterflow plate heat exchangers or rotors
- Powder coating inside and outside for excellent corrosion protection
- High standard of hygiene: tested by TÜV in accordance with DIN EN 13053 and VDI 6022
- High-quality casing design including T2/TB1 quality access doors (according to DIN EN 1886)
- Highly efficient fans with EC motors for low power consumption costs
- Convenient web/remote control via web-based server



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## The casing. Excellence as standard.

robatherm offers outstanding casing properties – as a standard, without special designs. Casing characteristics far above the standard requirements mean solid advantages in efficiency.

### **Outstanding casing characteristics in accordance with DIN EN 1886**

- Thermal bridging: TB1
- Thermal transmittance: T2
- Leak tightness: L1 (M)
- Casing deflection: D1 (M)
- Filter bypass leakage: F9



Final cleaning of variously sized thermo panels.

## Thermo panel.

The enormous strength and stability as well as the excellent thermal decoupling of the double-shell, powder-coated thermo panel is impressive. This results in an extremely high level of thermal insulation and airtightness as well as a low tendency for condensation on the casing.





The tightness of the thermo panels is convincing.



Drain pan with a rounded draining rim for complete emptying.

## **Unit floor.**

The lack of inaccessible corners or recesses characterizes the unit floor of robatherm AHUs and makes them easy to clean and maintain.

The drain pans with slopes on all sides and rounded draining rims drain the condensate without any residue.



Smooth unit floor.



Maintenance aisle with checker plate floor.



Maintenance aisle with floor grating.





Smooth, screw-optimized door leaf

## **Access doors.**

Access doors allow convenient access to all components. The thermally insulated door frame with welded corners ensures a high level of tightness and effectively prevents moisture from escaping or entering the casing.



Door lever with an internal catch hook in the positive pressure area.



Door stopper mechanism to prevent the door from slamming shut unintentionally.



Easy adjustable hinge.



Powder-coated, circumferential base frame.

## **Base frame.**

All casing cubes rest on a circumferential base frame powder-coated in the color of the unit to provide outstanding protection against corrosion.





Height-adjustable unit foot.



Complete AHU mounted on a DIN frame.



Assembly of a weatherproof AHU.

## A unit for all seasons.

robatherm AHUs reliably prove their worth even when exposed outdoors to wind, water, snow and sun: you can always depend on air handling equipment made by robatherm.



Water gutter and drain for controlled drain-off of rainwater.



Hinged weatherproof grate.



UV-resistant roof structure with drip nose.





The hygiene properties of robatherm units have been extensively tested and certified.

## Hygiene knows no compromises.

Increased hygienic requirements for air handling systems are becoming more and more important, in particular for applications where airborne particles may have serious consequences.

### Certified hygienic features

The excellent hygiene properties of robatherm units have been tested and certified by TÜV Nord and the Institute for Air Hygiene, Berlin.



The HEPA filter wall for high air quality requirements.



Clear markings for antimicrobial, powder-coated casings.







Tested and confirmed: the effectiveness of the antimicrobial coating.

## **Antimicrobial coating.**

The antimicrobial coating inhibits the growth of even multi-resistant germs. The high effectiveness and lasting effect have been tested and confirmed several times by an independent institute in long-term studies.



Acoustically decoupled frame.

## **Options via Options.**

The many detailed solutions make AHUs from robatherm so distinctive. The wide variety of options available enables us to perfectly customize your AHU to meet your requirements.



LED lighting.



Insulated sight glass with blackout option.



Damper with a lip seal for high level of tightness.



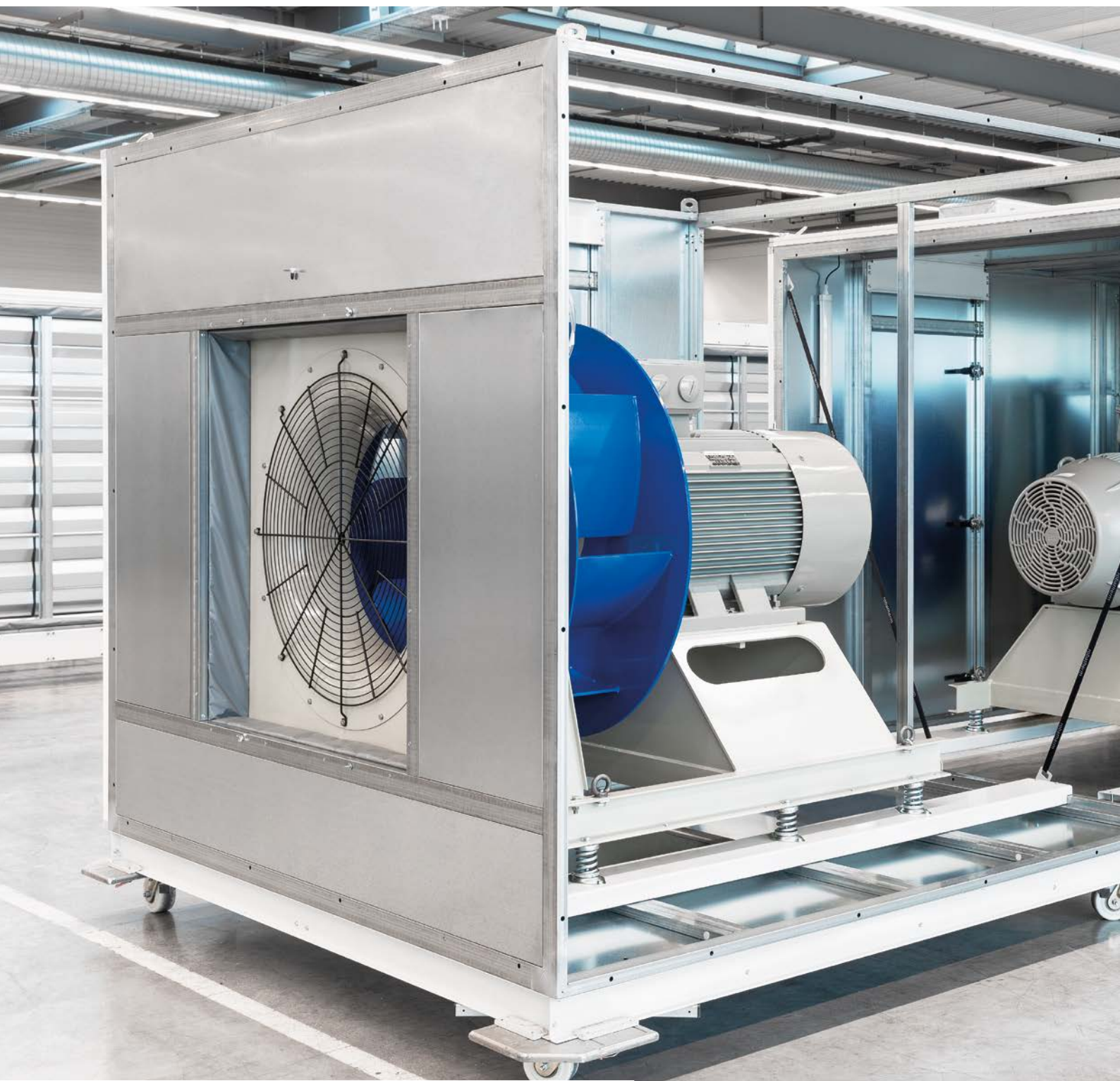




## **Fans. Setting air in motion efficiently.**

The fan-motor unit is the heart of every AHU. You can choose from a wide range of fan types and drive technologies. In addition, robatherm impresses with its flexibility and its wide range of installation options - for increased efficiency and lower power consumption.





Plug fans on vibration dampers insulators with suction grate and flexible connectors.

## Plug fans / fans with EC motors.

In addition to their compact design, corrosion-resistant plug fans are easy to clean and reliable in operation. robatherm uses only units balanced at the factory. Optionally available are fans equipped with EC motors, which are often more compact.





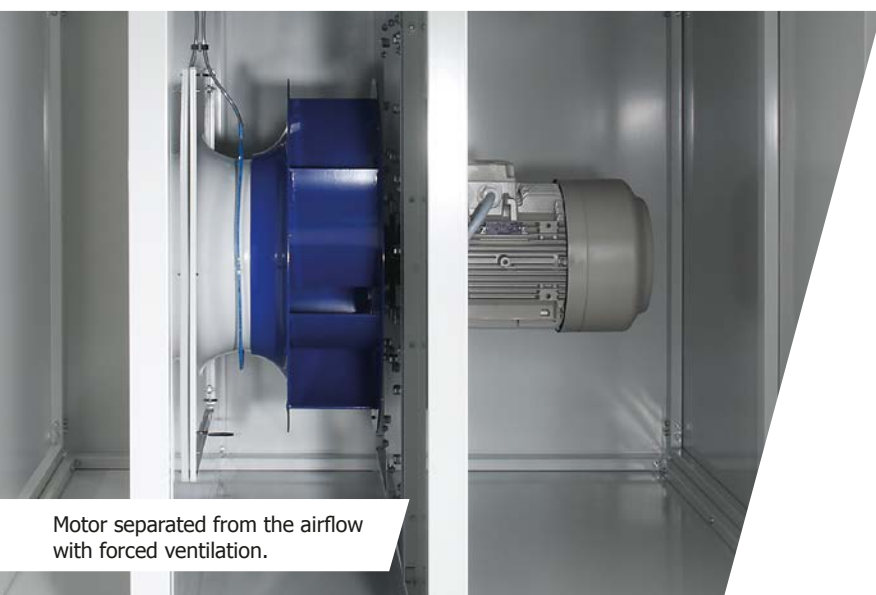
Fans with EC motors allow excellent cleanability of the AHU.



Fan installed vertically with a downward airflow.



Fan installed vertically with an upward airflow.



Motor separated from the airflow with forced ventilation.





Plug fans for parallel operation and redundancy.

## Wide range of installation options.

robatherm's flexibility offers a wide range of installation options for ideal airflow control. Fans located next to each other or one above the other, suspended for vertical airflows or combined as a „fan wall“ for maximum operational reliability - our contact persons at robatherm will be glad to provide you with competent advice.



Fan wall including wiring to control a total of 8 fans.







Factory acceptance test of an AHU with a fan wall.



Labels provide a quick overview of the most important data of the unit.

## One component – many details ...

There is more to it than merely installing a fan in a casing.  
Countless details are involved in creating a whole that meets  
our claim „made by robatherm“.



Measurement of the pressure differences at the fan nozzle.



Service switch with weather protection roof.



Frequency converter built into the casing.





Pull-out mechanism for convenient component removal.

**... and even more details.**





Digital volume flow indicator.



Stainless steel cable glands.



Grounding between fan and unit casing.



Spiral casing fans connected in parallel.

## Fans with spiral casing.

Installation of the impeller in a spiral casing is a characteristic feature of these fans. The air can be drawn in from one or both sides. Fans with spiral casings are particularly suitable for high volume airflows and high pressure loads.



Pressure control flap and additional supports to increase casing stability for fans with high pressure delivery.









## **Filtering. For clean air inside buildings.**

Filtering the air is a key function of AHUs. A large selection of different filter types combined with successful integration into our AHUs ensures the desired air purity.



The filter quick-clamping device with a high clamping force for mounting filters.



Pull-out filter wall for convenient and easy-to-maintain filter replacement.





Powder-coated filter wall for easy and safe maintenance.

## Scalable filter walls.

robatherm filter walls can be scaled as required for optimum integration into the casing. The foam seals in the filter walls minimize bypass leakage.

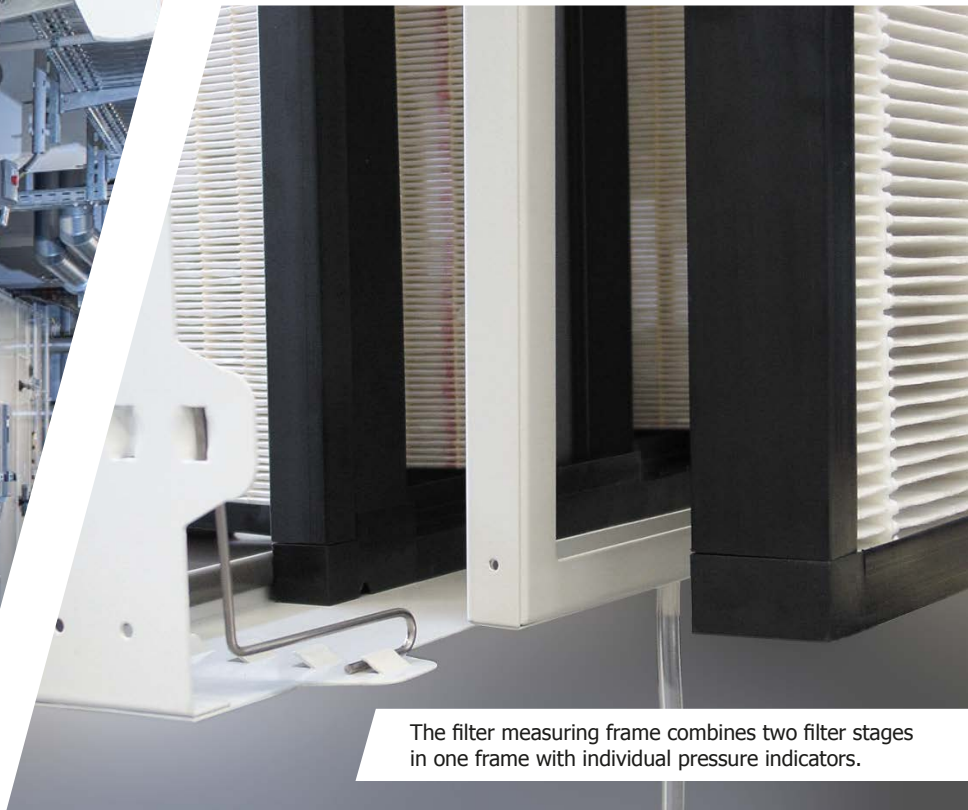




Activated carbon cartridge filter for filtering gas.

## Wide selection of filter media.

The robatherm filter wall is suitable for a wide selection of filter media including flat, pocket, pleated, metal and activated carbon filters.



The filter measuring frame combines two filter stages in one frame with individual pressure indicators.



The particulate filter wall is designed especially for EPA and HEPA filters.





Pressure measurement ports for convenient filter monitoring.

## Filter monitoring.

Filter monitoring is a key factor in ensuring long-term, unencumbered and energy-saving system operation. This is possible with the help of analog and digital differential pressure indicators. robatherm's control system technology offers many options such as automatic maintenance notifications and online pressure monitoring of filter stages via robatherm Connect.





Differential pressure switch for maximum pressure monitoring.




Analog differential pressure indicator.







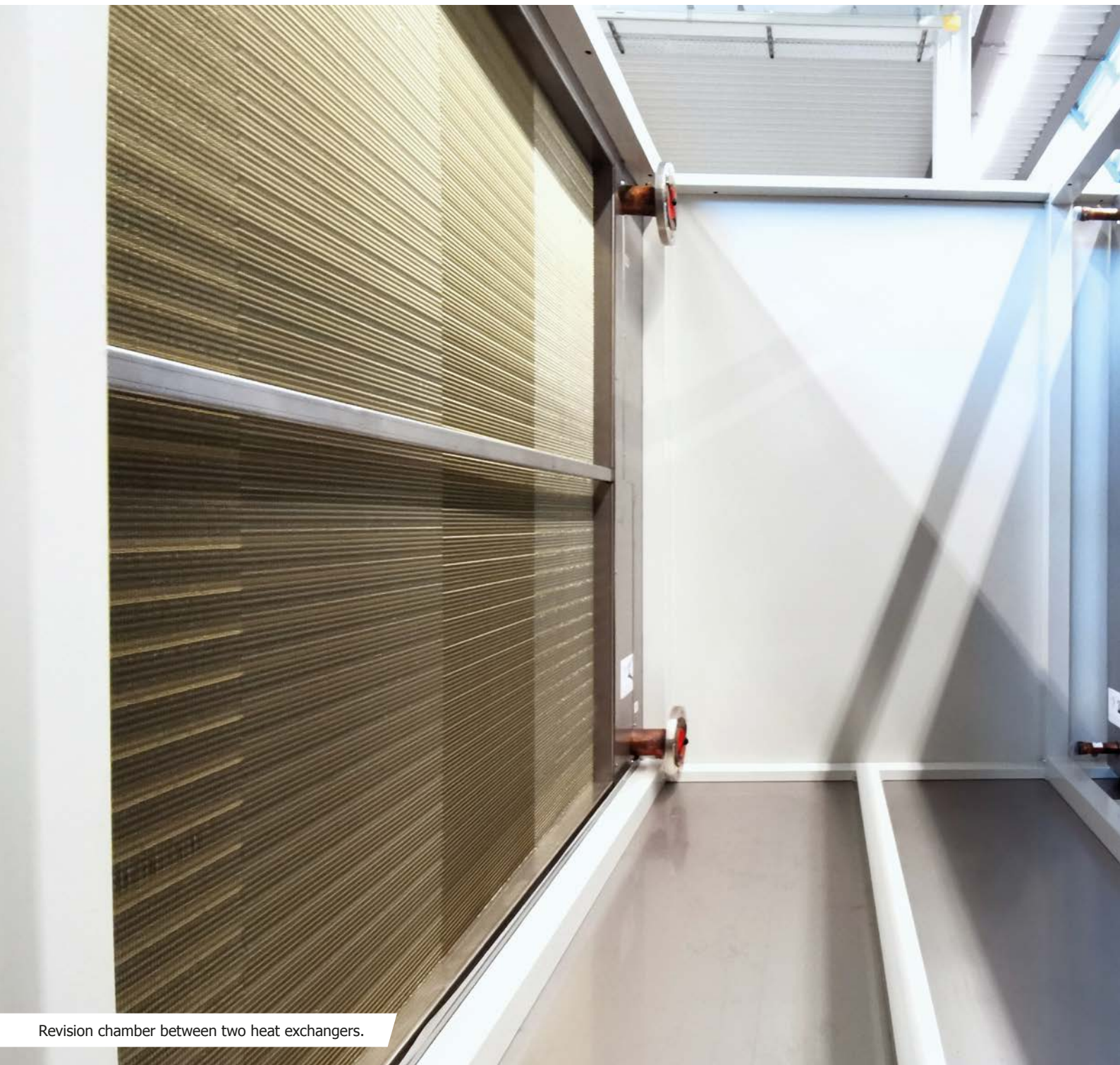


## Heat transfer. Transferring energy efficiently.

Controlling the temperature of the room air is essential for creating comfortable conditions. The temperature is controlled correspondingly by transferring cold or heat via a heat exchanger from a medium such as water or steam to the air to be conditioned.

- Cooling coil
- Heating coil
- Electric heating coil





Revision chamber between two heat exchangers.

## Heating coil / cooling coil.

A wide range of materials and combinations offer you maximum freedom of choice: robatherm's sales representatives will be pleased to provide you with competent advice in finding the best solution.



Pull-out rails allow easy cleaning and convenient component removal.

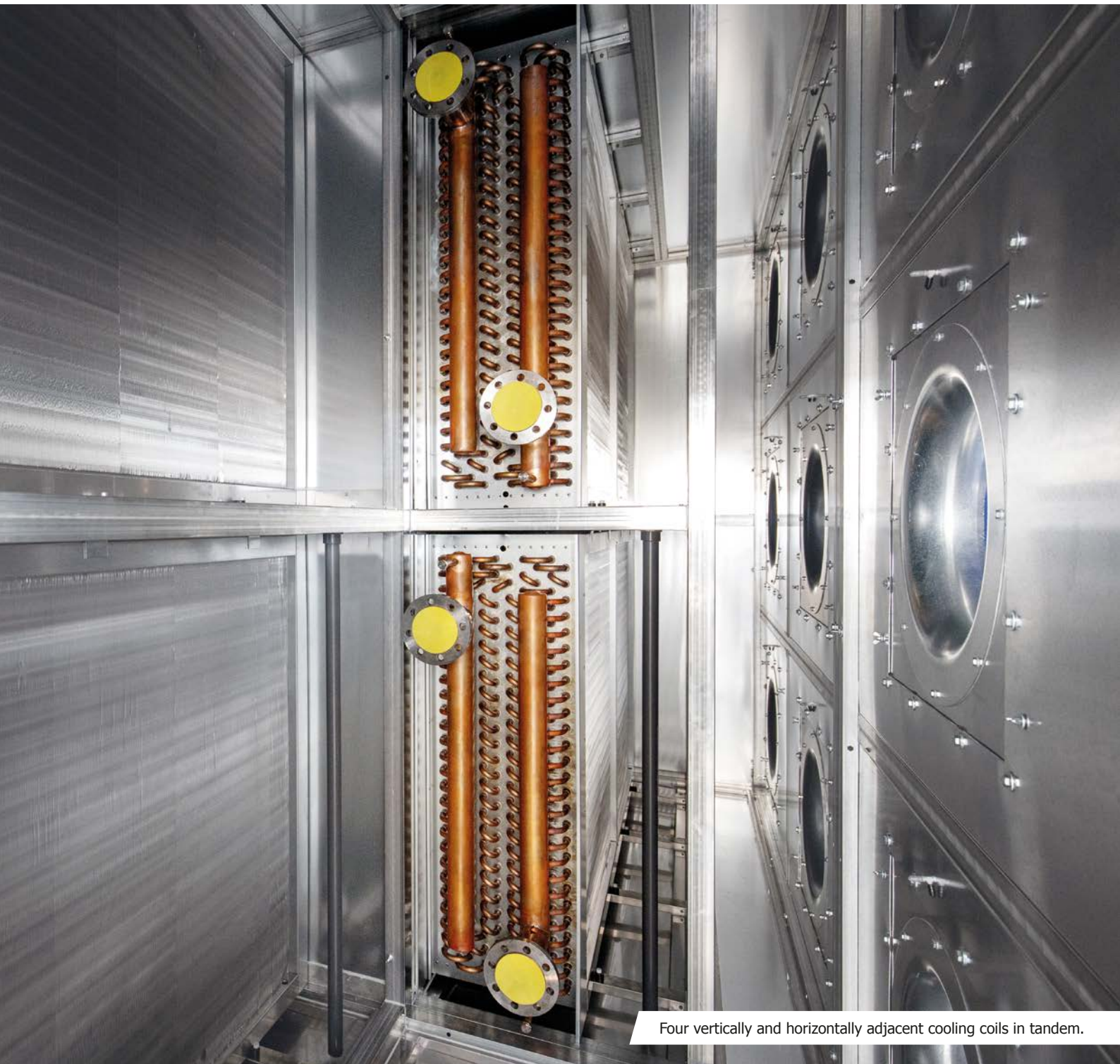




Four vertically and horizontally adjacent cooling coils.







Four vertically and horizontally adjacent cooling coils in tandem.

## Wide range of installation options.

The wide variety of available installation options provides the flexibility necessary to implement AHUs that represent the best solution for your requirements.





Cooling coil piping and connections inside the AHU.



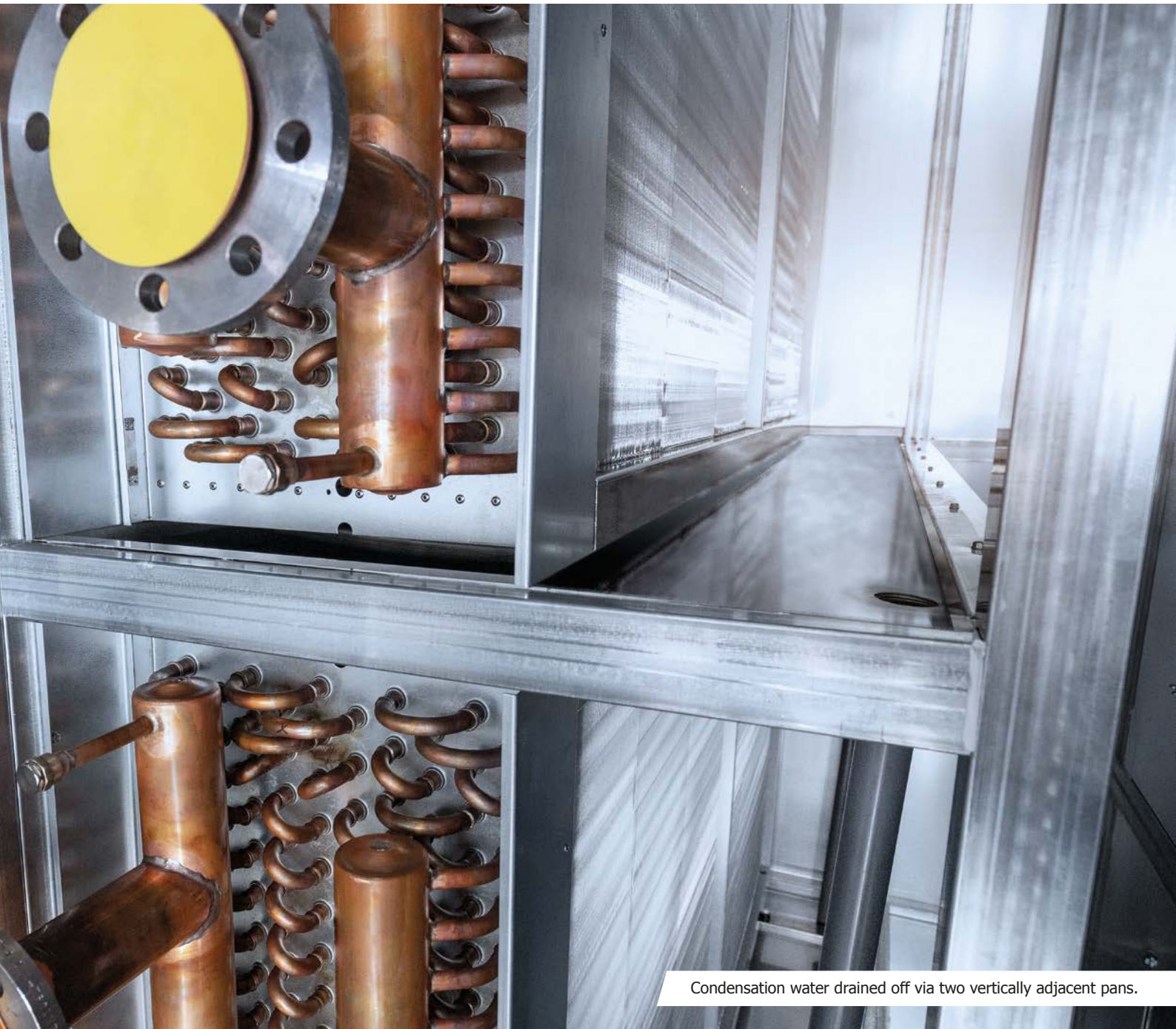
Flange connections for larger nominal diameters.



Conveniently removable panel for easy venting / draining.







Condensation water drained off via two vertically adjacent pans.

## The difference is in the detail.

Discover our expertise in the many details and options: reliable drain-off of condensation water, high-quality and leak-proof wall ducts and easy cleanability and maintenance of the heat exchangers.





Venting valves of a heat exchanger.



Removable drop eliminator.





Anti-freeze device at the heat exchanger.

## Details to your advantage.

The aim of the various details is to provide you with better quality and greater convenience.





Electric heating coil with removable stainless steel heating rods.

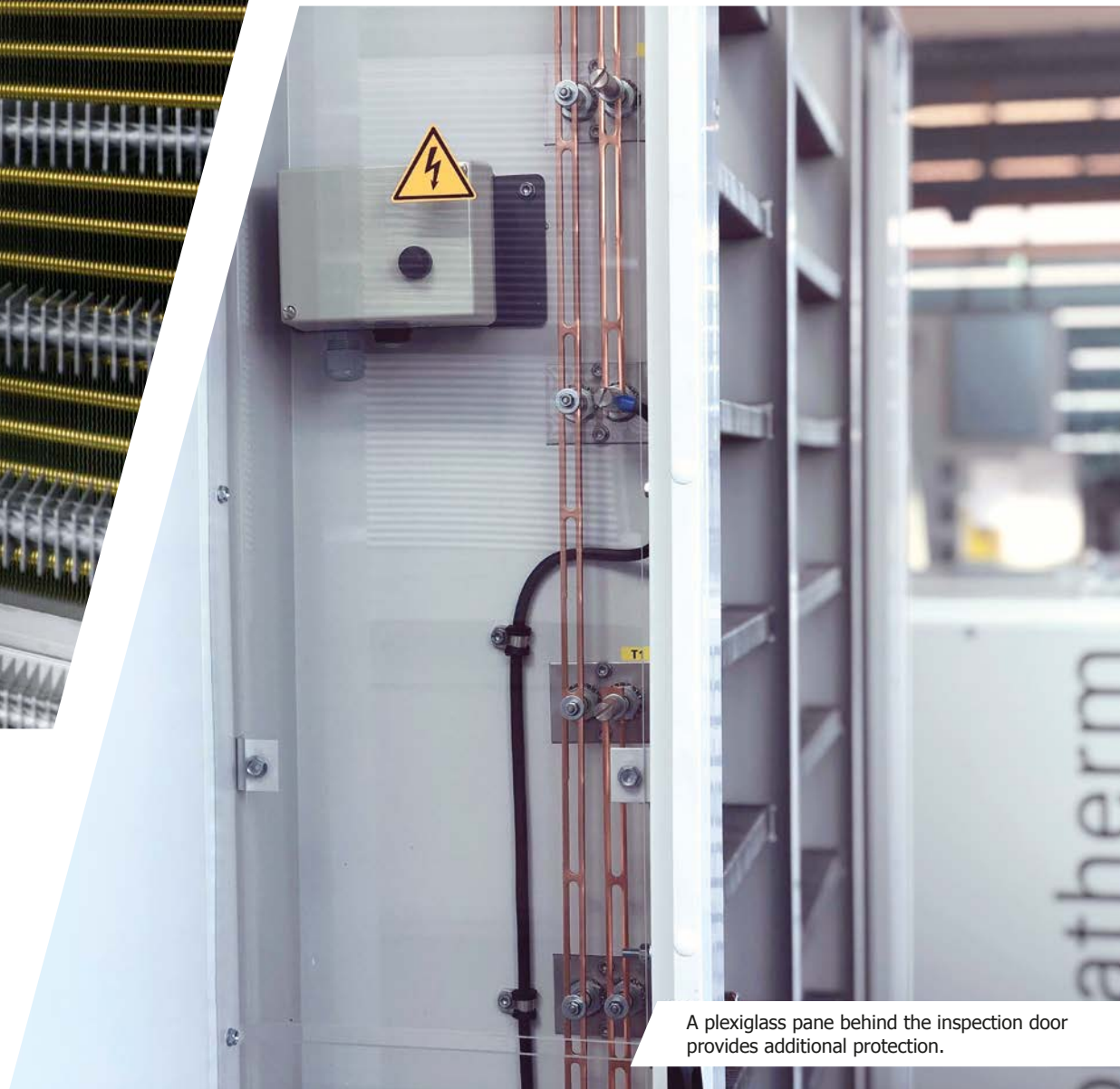
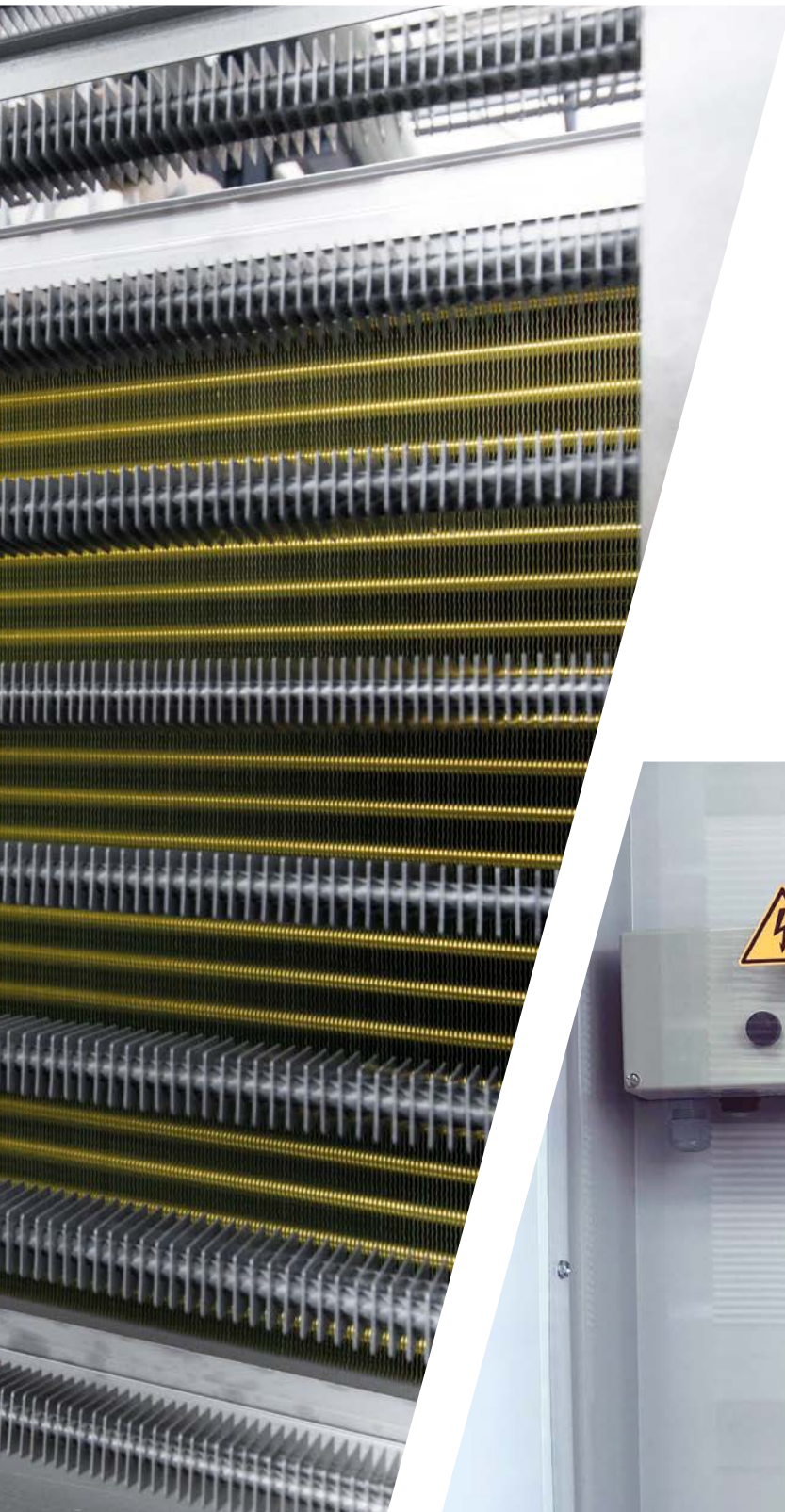
## Electric heating coil.

Safe operation has top priority for electric heating coils.

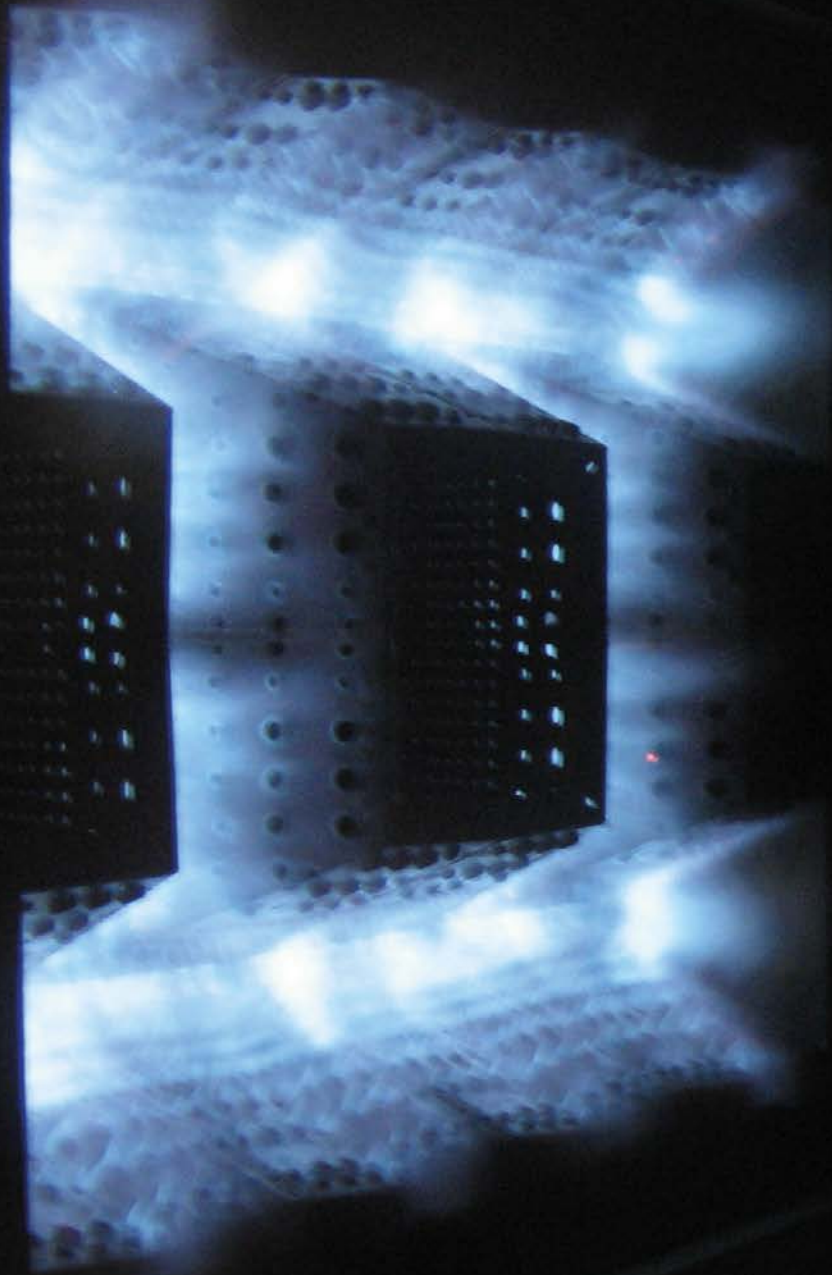
The most important safety device is the overheat cutoff device.

A safety chamber, accessible through lockable access doors, is located upstream and downstream of the electric heating coil.





A plexiglass pane behind the inspection door provides additional protection.



## **Heat generation. Directly inside the AHU.**

Gas is converted directly into heat in the AHU. robatherm offers an energetic and economical alternative to indirect heating of the airflow. The investment costs of integrated heat generation usually pay for themselves after a short time thanks to the low cost of operation.

- Direct gas fired heater
- Combustion chamber





The direct firing in the airflow is highly efficient.

## Direct gas fired heater.

Direct gas fired heaters are fired directly in the airflow. This is controlled by switching the firing ranges on and off. Compared to a combustion chamber, the pressure loss of the direct gas fired heater is low and the efficiency is very high.





Gas train in a casing with air outlets for forced ventilation.



Combustion chamber in a double-deck AHU including temperature sensor.

### Combustion chamber.

Apart from a long service life, combustion chambers are convincing thanks to their high level of economy. Although the control and heat transfer is slightly slower, combustion chambers provide a better air quality than direct gas fired heaters.





Fresh air supply for optimum combustion in the combustion chamber.

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## Heat recovery. For efficient operation.

An optimal heat recovery system is available for every application. The choice of the system depends on the relevant advantages in individual instances. Regulations, standards and directives also influence the selection of the system. robatherm provides you with the most efficient solution, tailored to meet your project-specific requirements.

- Rotors
- Crossflow and counterflow plate heat exchangers
- Run around coils heat recovery system (RAC)
- Heat pump





Enthalpy rotors with horizontally adjacent airflows and bypass.

## **Rotors.**

Rotors are highly efficient and take up very little space. The location of the fans is important when planning an AHU in order to minimize contamination with cross-flow leakage other airflows. Your contact person at robatherm will be pleased to provide you with competent advice.





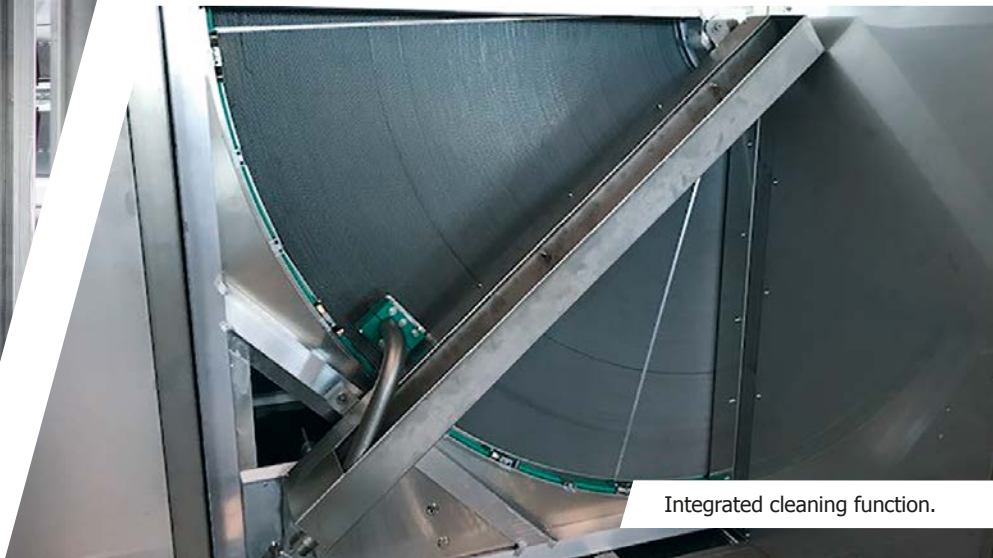


Rotor with bypass for optimized free cooling.

## Wide range of options.

Depending on the properties of the surface, rotors transmit not only thermal energy but also moisture. robatherm offers you a selection of condensation, sorption, enthalpy and desiccant rotors. Additional options such as rinsing chambers or automatic cleaning functions round off the HRS.





Integrated cleaning function.



Infinitely variable regulation of the rotor by a speed controller.



Plate heat exchanger installed at an incline with drain pans on both sides.

# Counterflow and crossflow plate heat exchangers.

Because plate exchangers have no moving parts, they are particularly easy to service and require little maintenance. In contrast to rotors, they take up more space but offer better tightness.





Plate heat exchanger with an integrated bypass for vertically adjacent airflows.



Counterflow plate heat exchanger with a heat recovery coefficient of up to 85 %.





Installation of a plate heat exchanger in the casing of an AHU.

## Wide selection of designs.

Various details such as the sloped installation, epoxy coating and the availability of a split-plate version complete the range of plate heat exchangers.

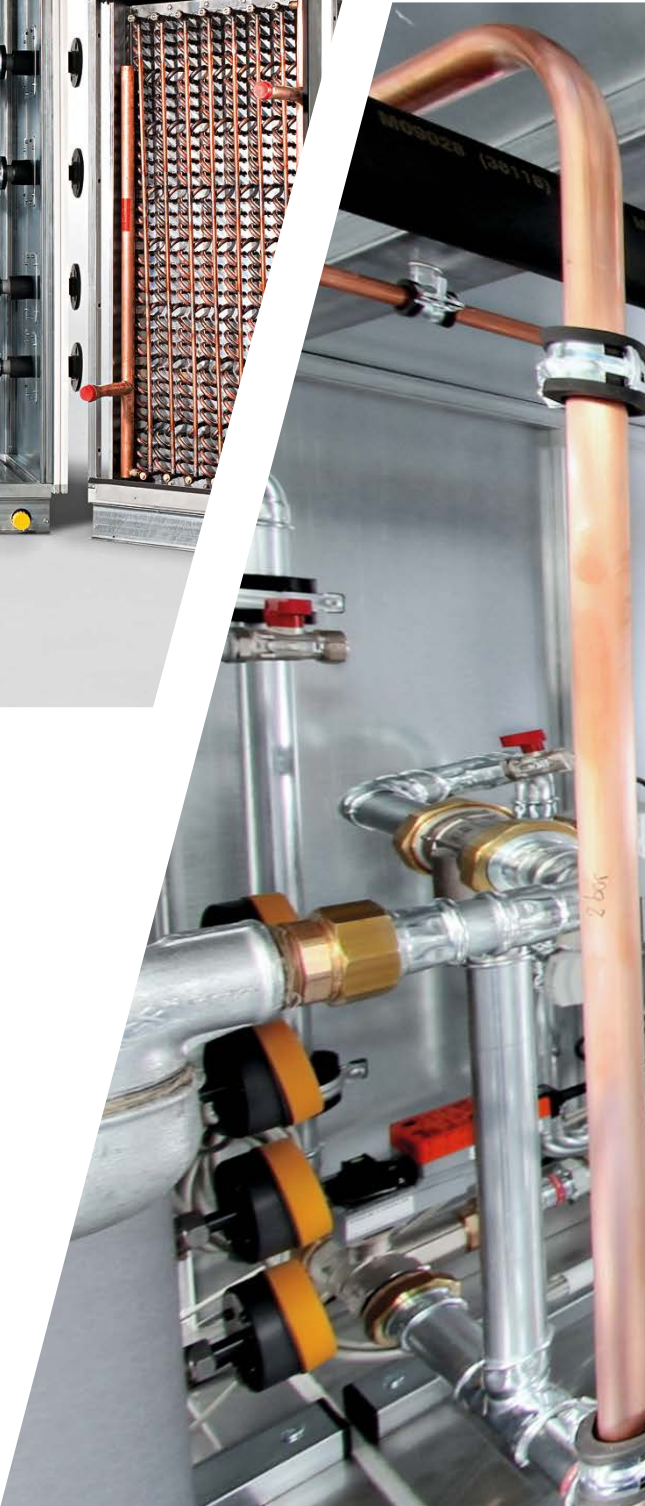


Reliable draining of condensation water via drain pans.





Piping completely integrated in the AHU for a RAC.



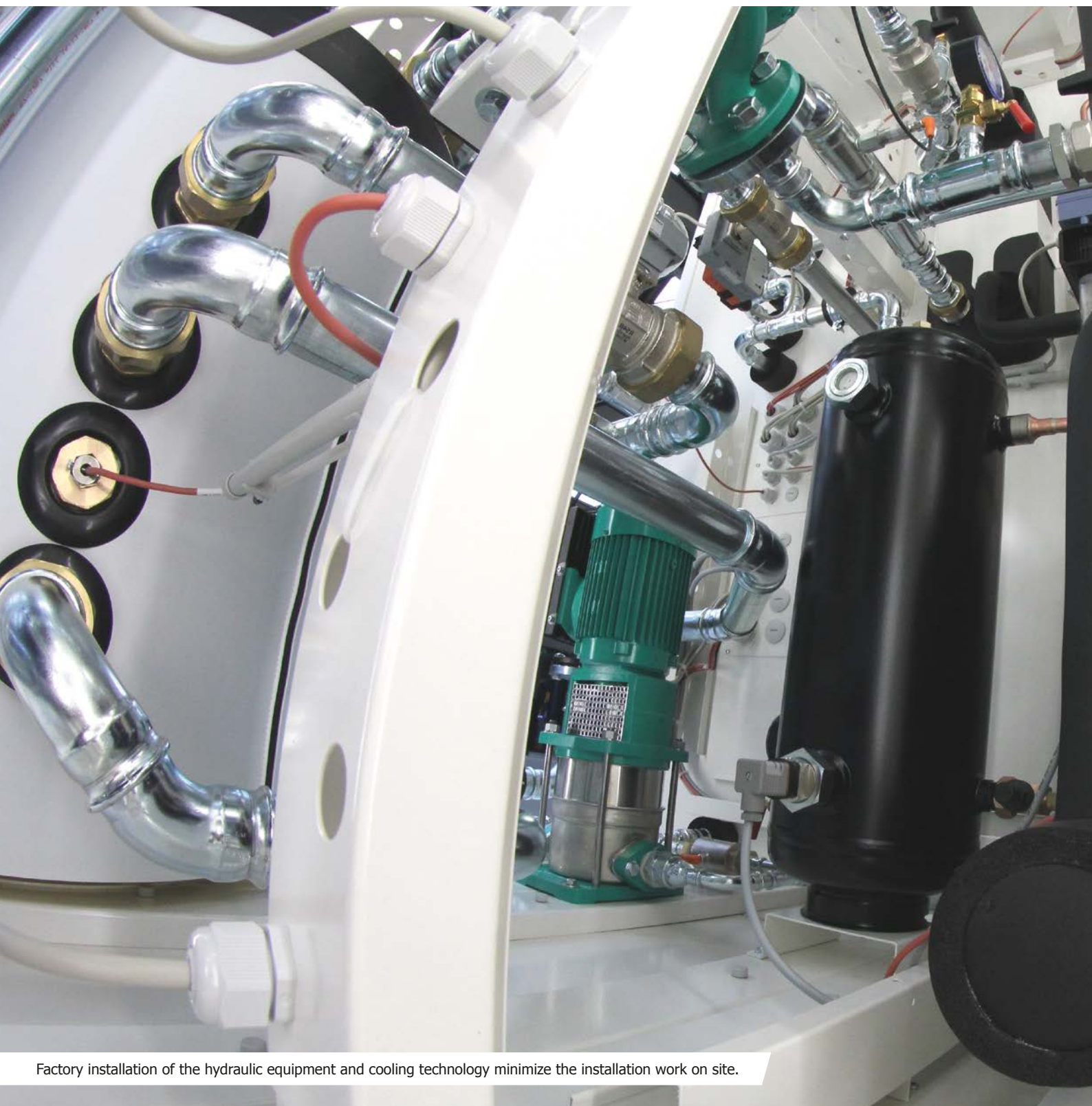




Hydraulic control group in the AHU.

## Run around coils heat recovery system (RAC).

RAC solutions offer maximum variability thanks to the small space requirement and the physically independent layout. The control system technology developed for HE-RAC (high-efficiency run around coils heat recovery system) regulates the heating and cooling feed as well as the heat transfer circuit.



Factory installation of the hydraulic equipment and cooling technology minimize the installation work on site.

## Heat pumps.

A major advantage of heat pump technology is its flexible use: it is used as a heat pump in the winter and as a chiller in the summer. Whether by a hot gas bypass or speed control, robatherm offers a wide selection of applications and control options.





Heat pump with compressor network.







## **Humidification. Humidify air hygienically or cool it in an environmentally friendly manner.**

The room air humidity is a key component of creating comfortable air conditions. robatherm offers a wide range of systems for humidifying air hygienically.

- High-pressure spray humidifier
- Low-pressure spray humidifier
- Steam humidifier
- Contact humidifier
- Recirculating spray humidifier





High-performance nozzles of the high-pressure spray humidifier.



Low-pressure spray humidifier with a vortex wall.



High-pressure spray humidifier integrated into the AHU.

## High-pressure spray humidifier.

The high-pressure spray humidifier contained in a watertight stainless steel casing generates an air saturation of up to 100%. Under high pressure, the water consumption of the high-performance, high-pressure nozzles is very low. A vortex wall allows good air mixing.

## Low-pressure spray humidifier.

A nozzle pressure of approx. 16 bar is sufficient for low-pressure spray humidifiers. They are equipped with a water-lubricated, maintenance-free pump and a vortex wall to swirl the atomized mist with the airflow.



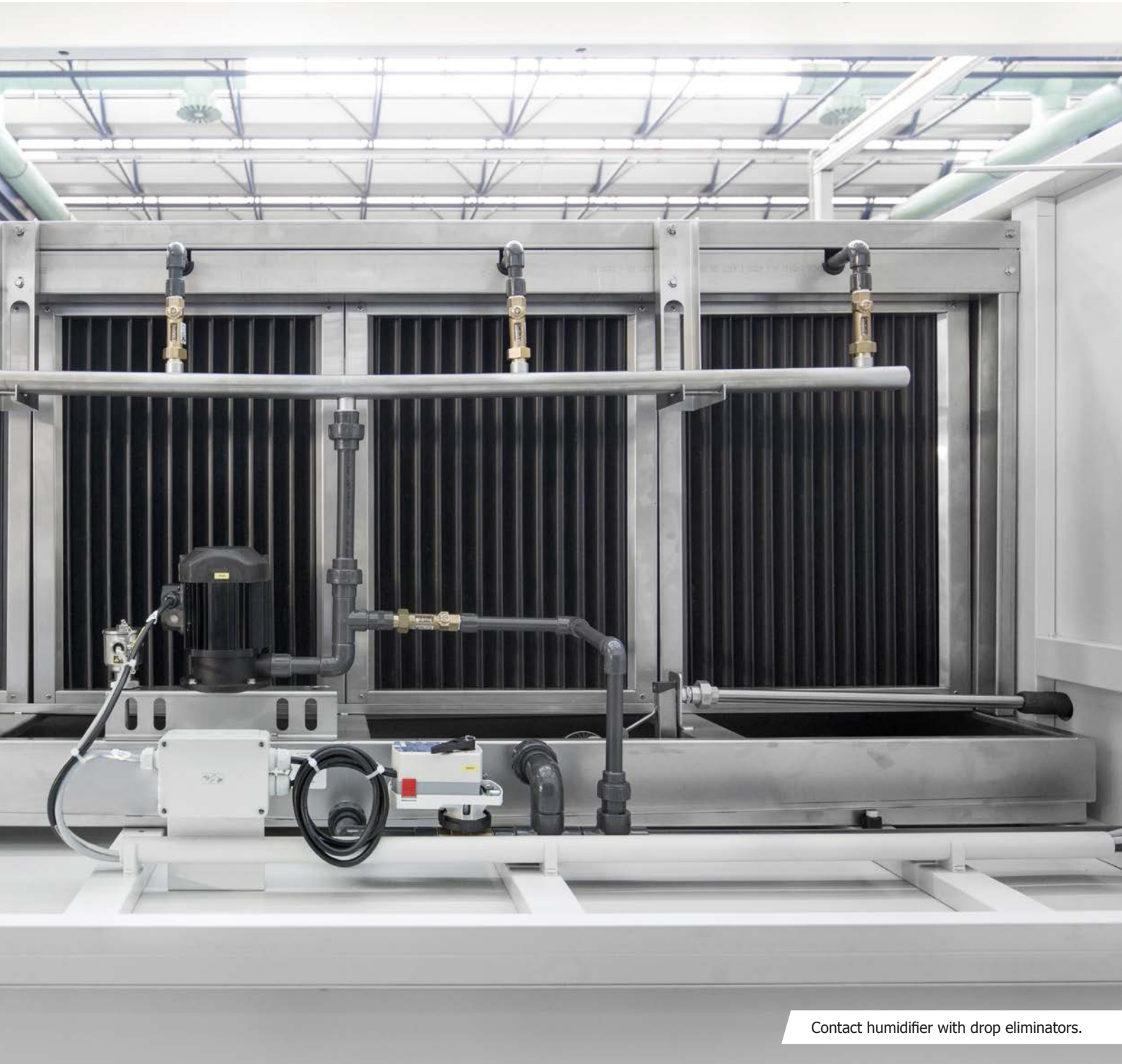


Hygienic, inorganic evaporation surface.



Steam distributors in the AHU.





Contact humidifier with drop eliminators.

## Contact humidifier.

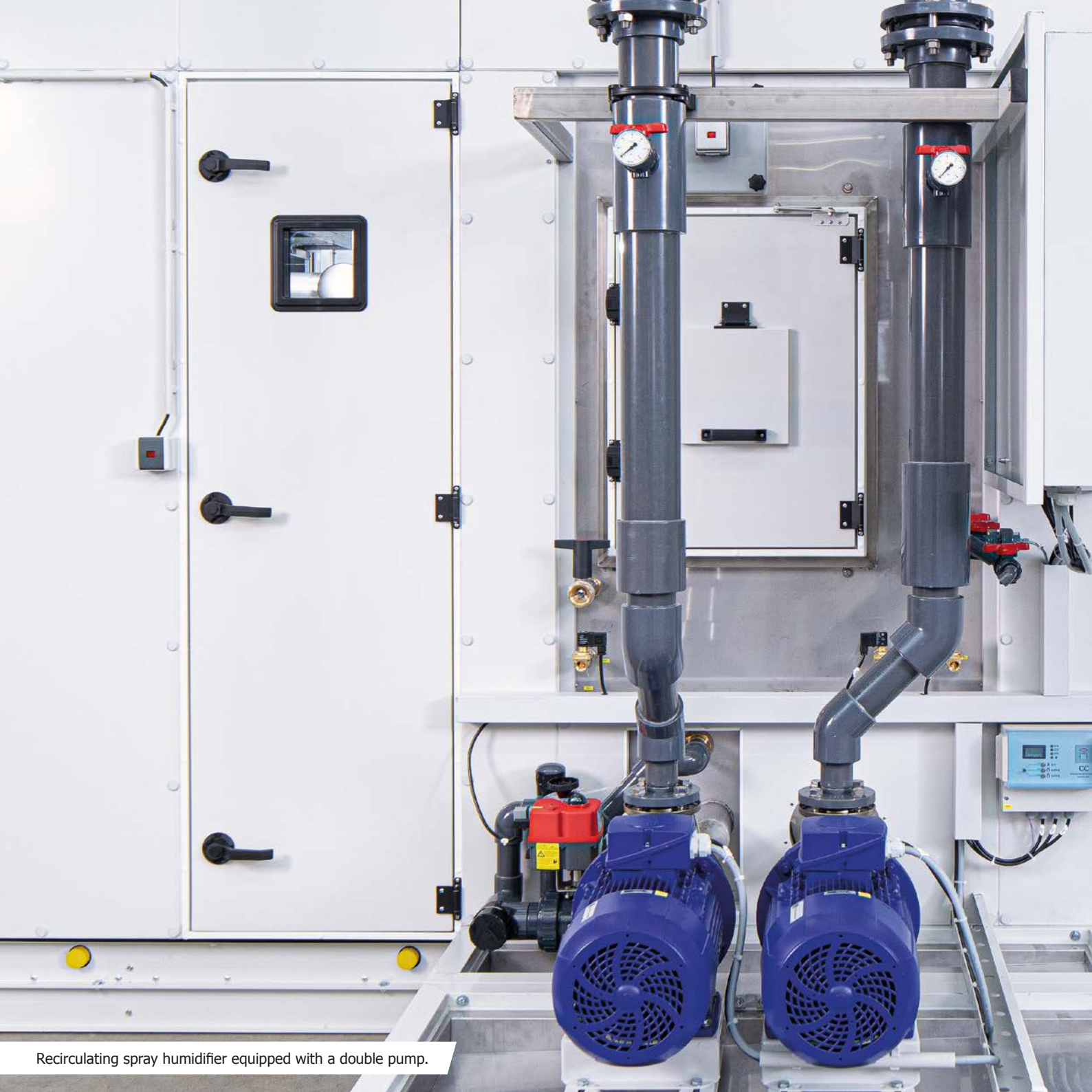
Contact humidifiers with short overall lengths are able to achieve high degrees of humidification. Contact humidifiers also require low amounts of water.

## Steam humidifier.

Steam humidifiers are ideal for fulfilling maximum hygiene requirements. Steam generation is an indication of the extent of robatherm's flexibility.

It is possible to connect the steam lances to a steam network provided by the customer. Generation can also be carried out directly in the AHU.





Recirculating spray humidifier equipped with a double pump.

## Recirculating spray humidifier.

In addition to humidification, recirculating spray humidifiers wash coarse particles and gaseous substances out of the air. robatherm's Hygienecontrol, the automatic system for draining, cleaning and drying humidifiers, ensures a high level of hygiene and ease of maintenance.



Hygienecontrol regulates the cleaning process.



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## **Noise attenuation. Productivity can also be quiet.**

AHUs play a key role in making people feel comfortable in buildings. In addition to a comfortable temperature and humidity, there are other factors such as loud noises that influence human well-being. The excellent casing properties keep the noise emitted by AHUs from spreading to the immediate vicinity. Silencers additionally prevent noise from being transmitted into rooms through the duct network.

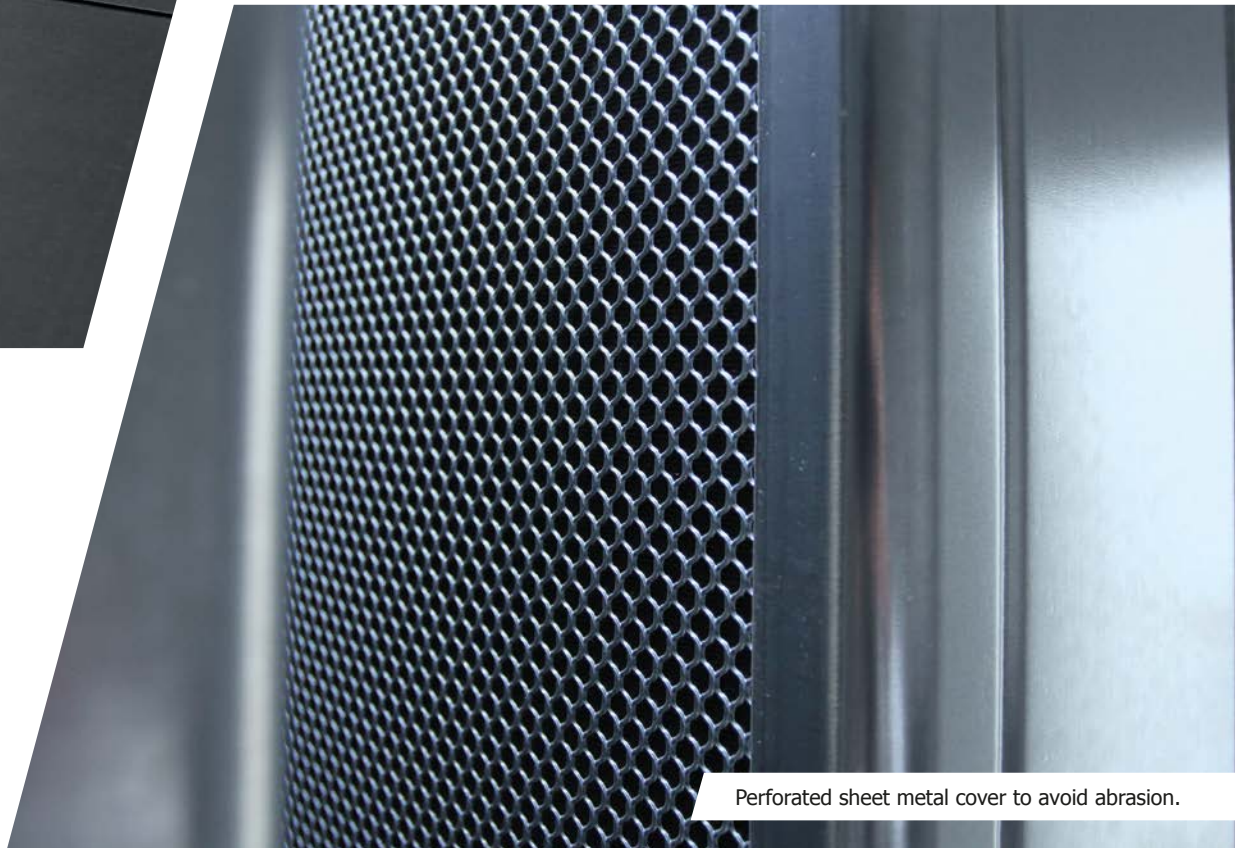




Handles facilitate removal and installation of removable silencers.

# Silencers.

The silencers are available in a wide variety of sizes and designs.



Perforated sheet metal cover to avoid abrasion.



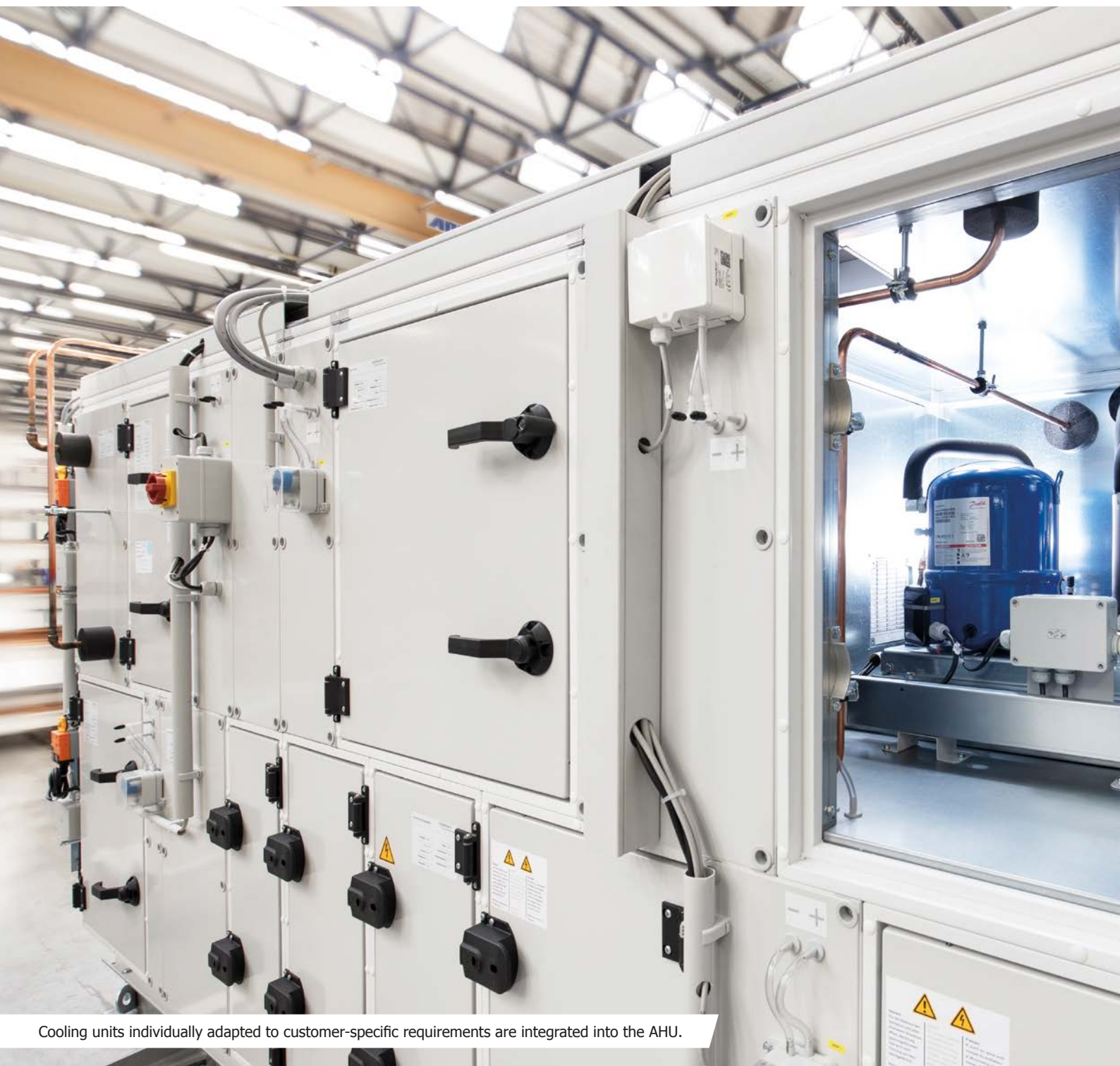




## **Cooling technology. Competency from a single source.**

Our decades of experience in the dimensioning, manufacture, commissioning and maintenance of air-cooled cooling systems and reversible heat pumps ensures optimum air temperature control.





Cooling units individually adapted to customer-specific requirements are integrated into the AHU.

## **Minimum costs, maximum flexibility: integrated cooling technology.**

The space-saving integration and efficient design of all cooling components imply a minimum in investment and operating costs. The device control and cooling technology integrated at the factory create an optimal unit. On-site installation and assembly costs are reduced to a minimum.



Extensive safety measures.



Split air handling equipment can be combined with AHUs to create a fully harmonized complete system.



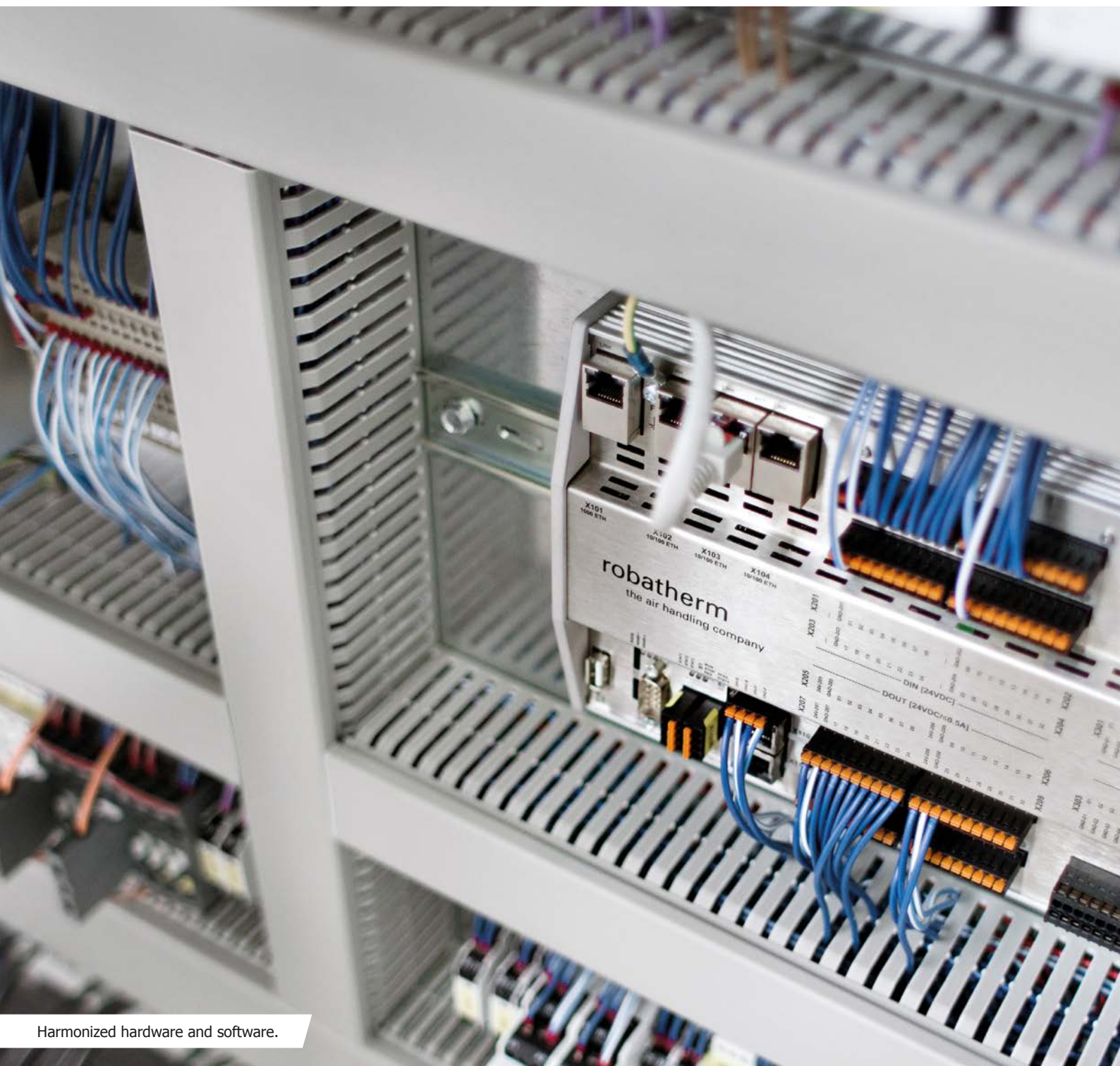




## **Control system technology. Intelligent air handling technology.**

Combined with a smart control system, new possibilities open up in the efficient operation of AHUs in terms of monitoring, operation and control. The service package offered by robatherm includes the integration of electrical, control and automation systems. Perfectly coordinated for robatherm units the hardware and software are planned, integrated and tested at the factory.





Harmonized hardware and software.

## Factory-integrated control system technology.

The integrated control system technology offers a wide range of communication options. The robatherm software is tailored to AHUs and can be configured quickly and easily according to individual application requirements.

### Intelligently networked: robatherm Connect

With robatherm Connect, you can operate your AHUs at any time from wherever you like. The online function provides tools for analysis and troubleshooting via remote access. Additional options in operating AHUs include trend analysis, reports and derivation of specific optimization potentials.



Touch display with an intuitive user interface facilitates operation.



Electrical wires are labeled and installed without strain.







**Disclaimer**

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