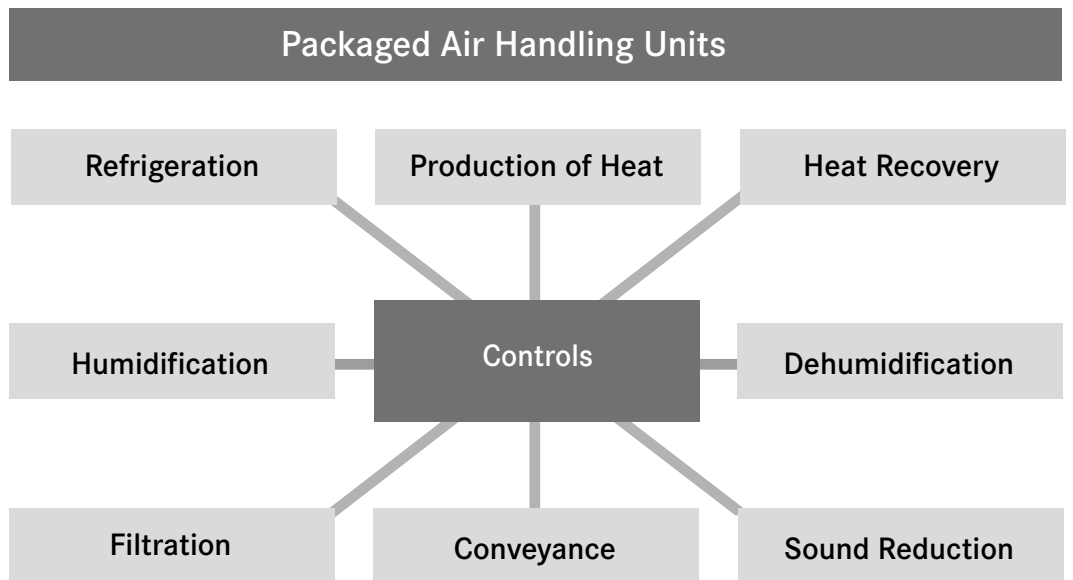




All-in-One:
Packaged
Air Handling Units

robatherm
the air handling company





All-in-One: Individually Designed and Factory Tested.

Factory integrated systems provide substantial cost and time advantages.

This considerably reduces the cost for design and adaption of the single elements as well as installation time and -cost on site. Scope of supply and warranty limits is clearly defined. Services such as commissioning are available from one source.

Substantial savings can be achieved on investment cost as well as operating and maintenance cost by choosing robatherm packaged air handling units.

The units are available in weather proof, indoor and hygienic version and are ideal wherever air conditioning is required and heat or cold has to be generated at the same time. Examples are office buildings and sales or administration locations as well as production facilities and hospitals.

Integration of all individual systems (see left) at the factory as opposed to AHUs which are completed on site. This means robatherm packaged air handling units offer more than space saving advantages – new perspectives open up.

The units are individually designed according to customer's requirements and delivered to its final destination. Connect the unit to the duct system, to water and electrical supply – that's all to do.

All from a single source.

Low investment, operation and maintenance costs (LCC).

High energy efficiency.

Enhanced hygiene standard.

Ready to plug in, easy assembly.

Network compatible to all bus systems.

Compact design.



DX-Technology – Efficient and Economical.

Minimization of design and installation costs –
maximization of efficiency.

Cooling and dehumidification

in room air conditioning are gaining more and more importance as a result of growing human and industrial climate demands. Environmental conditions and modern architecture support this trend.

robatherm integrates the entire cooling technology inside the AHU, exactly adapted to the individual needs. Compressors, heat exchangers and all other components complete with the design of its interaction are carefully planned and assembled in accordance with the state of the art.

robatherm considers maintenance and service areas for all components inside the unit as well as the wiring- and tubing layout at the design stage.

Intelligent control strategies for fans, compressors, valve systems etc. as well as the tailored use of available power sources (such as heat recovery, free cooling, condensing heat) ensure high plant efficiency.

This means, robatherm packaged air handling units lead to lowest design, investment, installation and operation cost.

Two different cooling principles are available: direct evaporation and chilled water technology.

Direct evaporation

The heat exchanger in which the refrigerant evaporates (DX-coil) is in direct contact with the air to be cooled.

- Utilization of exhaust thermal energy during wintertime (heat pump function).
- Re-heat of the supply air by utilization of the condensation energy (re-heating coil).
- Exhaust or outside air condenser.

Chilled water

The chiller's evaporator cools process water or sole (primary circuit). This water is fed into the cooling coil in order to cool the supply air and, if necessary, to other devices of the plant as well.

- Hydraulic coupling and decoupling of heat and cooling energy consumers.
- Utilization of the condenser heat to dry outside filters or re-heat of the supply air during summer time.



Optimized system.

High coefficient of performance (COP) and efficiency.

No distribution or shutdown losses.

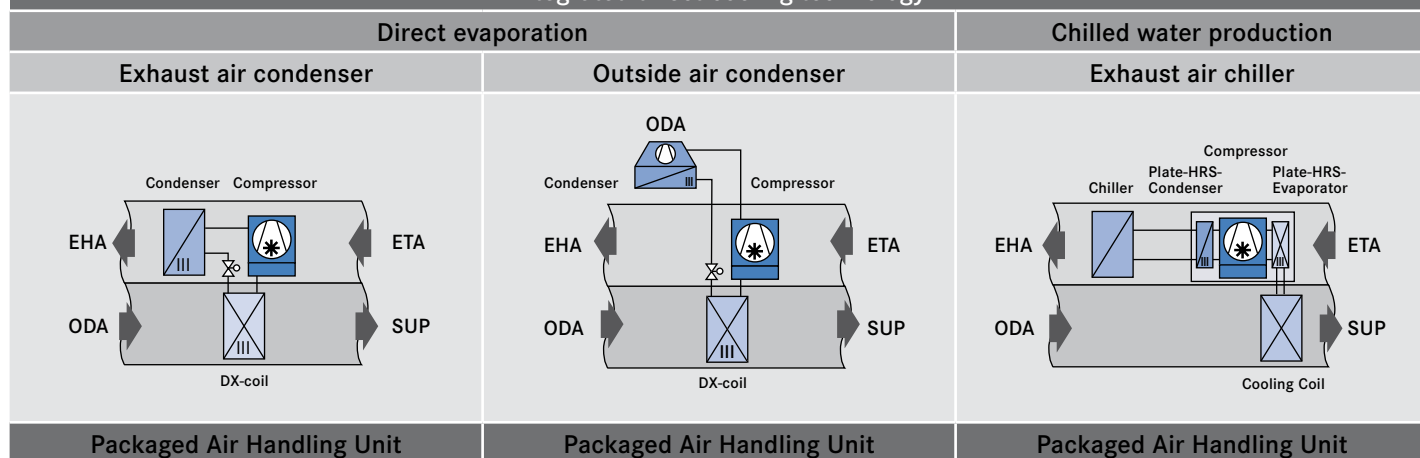
No additional installation (e.g. evaporators or heat exchangers).

Free cooling.

Reversible heat pump.

No or only minor back up heat for the air conditioning

Integrated direct cooling technology



Description of air types (per DIN EN 13779): ODA = outside air, SUP = supply air, ETA = extract air, EHA = exhaust air, RCA = circulating air



Air Handling from a Single

Integrated controls – tailored, powerful
building management systems by various

Smart Control

Optimum tailoring
to AHUs.

User friendly
operation.

Maintenance management

Automatic inspection
message.

Enhanced reliability.

Low service
requirement.

Smart Control

robatherm developed the Smart Control DDC software as the optimum way of achieving complex thermodynamic objectives of packaged air handling units in terms of reliability, efficiency and performance.

Smart Control contains all function modules as standard, which produces the appropriate regulating strategy and duty by activating the appropriate parameters. This individual parameterization completely eliminates all cost intensive at site programming during commissioning.

The DDC hardware is available in various sizes. robatherm selects the optimum type on each application.

The clear text display terminal gives confidence by its simple and convenient operation through dialogue driven, dynamic menus and display controls.

Maintenance management

Smart Control provides an integrated maintenance management tool. This not only includes logging of operating time and shutdown periods, but as well a service indication for all components. This supports general plant safety and low maintenance cost.

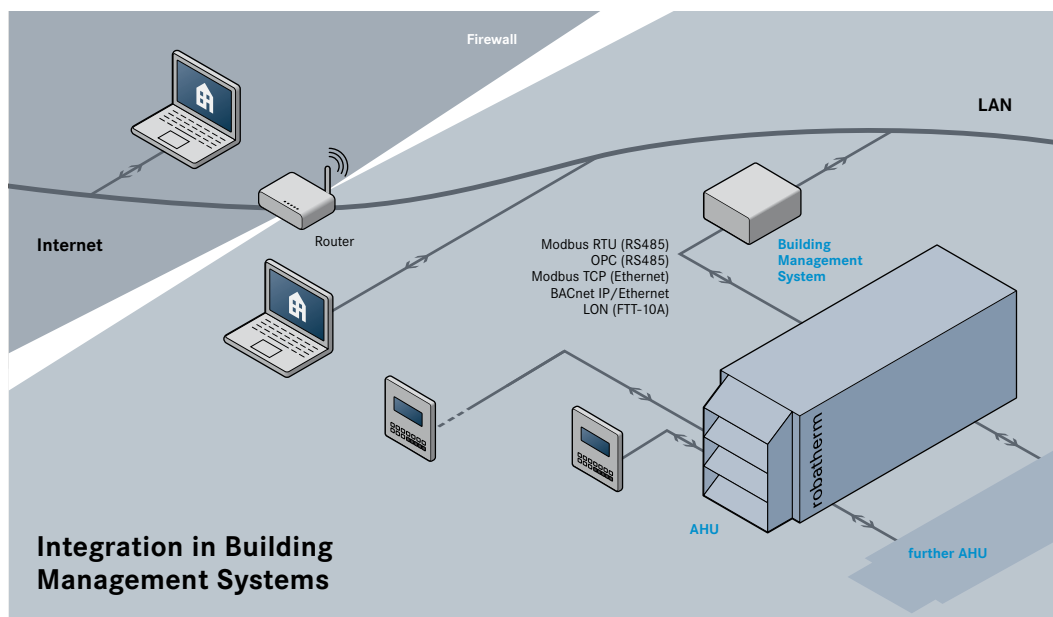
Multiple communication possibilities

robatherm Smart Control offers multiple communication possibilities: from cost effective remote terminal to open communication. This enables the individual robatherm units to communicate among one another and to higher levels of control.

g Unit and Control System e Source.

ful and qualified to be incorporated into
rious protocols

Open communication systems with Modbus, OPC, BACnet and LON are available for cost effective coupling to higher level building automation systems.



Communication

Remote Terminal for remote operation.

Plant visualization.

Alarm management.

Open communication via Modbus, OPC, BACnet and LON.

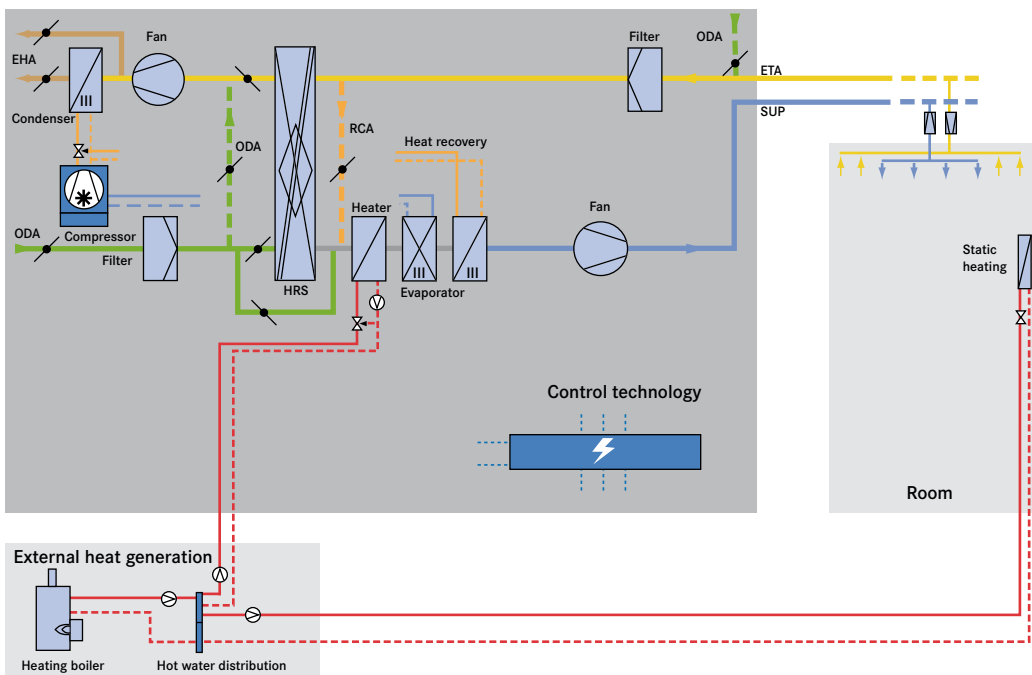
A Suitable Solution for Every Use.

Individually designed – completed in the factory.

The following examples are supposed to deliver helpful suggestions in using the opportunities of robatherm packaged air handling units. We are ready to develop the best solution for each of your demands.



Packaged Air Handling Unit with direct evaporation and exhaust air condenser



- Exhaust air condenser
- Condensing pressure control with additional outside air
- Circulating air operation
- Re-heat condenser coil
- Bypass on heat recovery and condenser

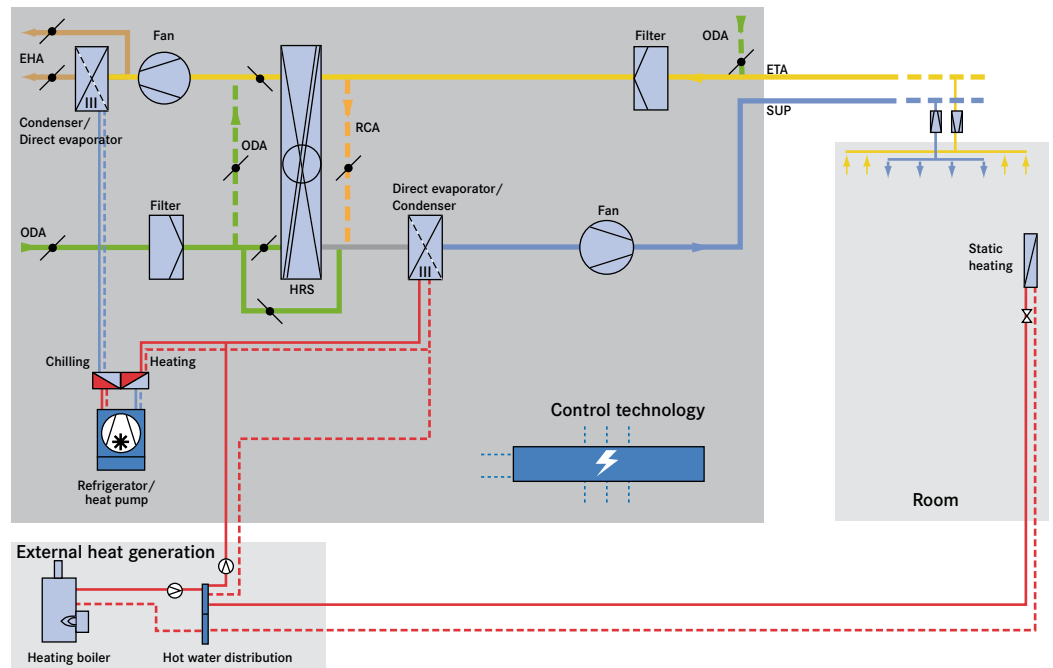
Belongs to packaged air handling unit

Description of air types (per DIN EN 13779): ODA = outside air, SUP = supply air, ETA = extract air, EHA = exhaust air, RCA = circulating air



Packaged Air Handling Unit with reversible heat pump

- Switchable direct evaporation
- Heat recovery from exhaust air
- No or only minor back up heat for the air conditioning
- Defrosting function of the exhaust air direct evaporator
- 4 valve system



Belongs to packaged air handling unit

Description of air types (per DIN EN 13779): ODA = outside air, SUP = supply air, ETA = extract air, EHA = exhaust air, RCA = circulating air

Best Choice. Best References.

Trust and confidence emerge from quality.

That is why many well-known companies favor robatherm's solutions.



Automobile Industry

Chemical and Pharmaceutical Industry

Commercial Building

Electronic Industry

Hospital

Production

Automobile Industry Alfa Romeo, Audi, BMW, Bugatti, Citroen, DaimlerChrysler, Ford, General Motors, Honda, Iveco, John Deere, KIA, Michelin, Opel, Peugeot, Porsche, Renault, Rover, Scania, SEAT, Skoda, Suzuki, Toyota, Volkswagen, Volvo
Chemical and Pharmaceutical Industry 3M santé, BASF, Bayer, Beiersdorf, Boehringer, BP, Degussa, Du Pont, Fraunhofer Institut, Fresenius, Glaxo Smithkline, Höchst, Institut Pasteur, Krupp, Linde, L'Oréal, Labo Piette, Merckle, Merial, Osram, Pfizer, Procter + Gamble, Roche, Sanofi, Schering, Solvay, Thomae, Urengo
Commercial Building Allianz, Commerzbank, Crédit Agricole, Deutsche Bahn, Deutsche Bank, Disneyland, Dresdner Bank, ECE, H&M, IKEA, Interspar, Mediamarkt, NATO, RWE, SAP, Semperoper Dresden, Flughafen Tel-Aviv, TU Dresden

Electronic Industry Acer, Alcatel, Altis, AMP, Bosch, BSH, Corning, Epcos, Hewlett Packard, Hitachi, IBM, Intel, Max-Planck-Institut, Microchip, Motorola, NS Electronics, Osram, Philips, Q-Sells, Radiall, Siemens, SIGMA, Soitec, Sony, STMicroelectronics, Texas Instruments, THAI CRT, Thales, Toshiba, Tower, TSMC
Hospital Beijing Hospital, Guangxi Hospital, Hôpital Saint Joseph Paris, Isarklinik München, Jilin Hospital, Klinika Moskau, Shanghai Hospital, St. Louis Hospital, Universitätsklinik Essen, XinHua Hospital Shanghai, Zhengzhou Hospital
Production Airbus, Arcelor, Carl Zeiss, Coca Cola, Conergy, Continental, EADS, EON, Eurocopter, Ferrero, Hartmann, Hilti, Liebherr, Mc Donalds, MAN, Nestlé, Philip Morris, Thyssen Krupp, Trumpf, Vaillant, Viessmann, Voith, Wanzl.

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