



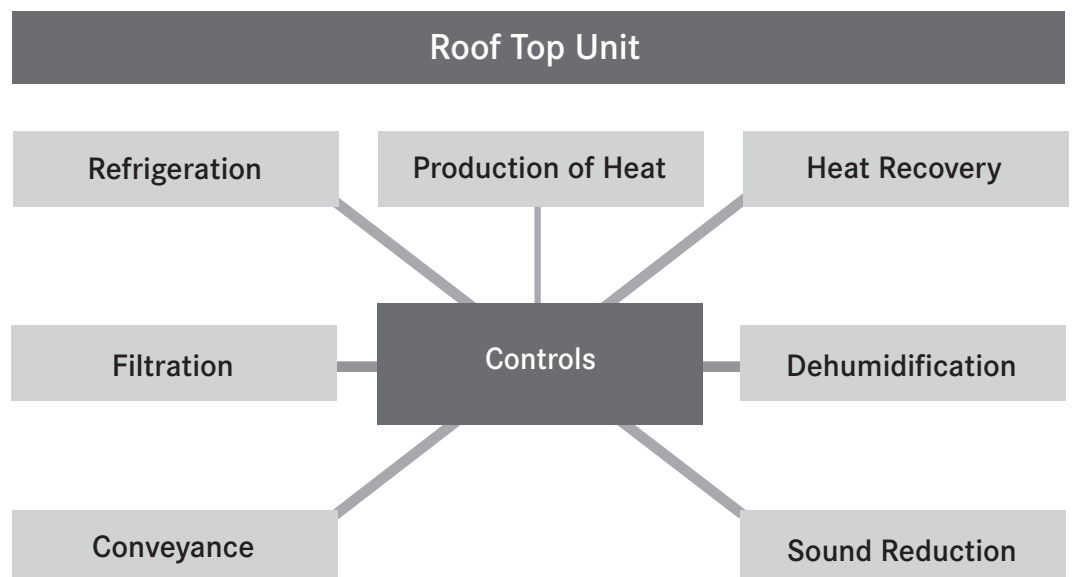
**Roof Top Units:  
The New Dimension  
More Quality  
Less Cost**

**robatherm**

the air handling company



Citypark, Ljubljana, Slovenia



# All in One: Roof Top Units Complete and Easy to Use.

**Standardized Roof Top Units save you plenty of time, money and installation space in designing and executing your projects.**

**Weatherproof** complete units with controlled outdoor-air supply ensure agreeable indoor-air conditions at low investment and installation costs.

Controlling supply- and discharge air is indispensable in new buildings. Due to extended insulation and air tightness, hardly any fresh air reaches the rooms without mechanical ventilation. In the absence of controlled fresh air supply, people's work performance will decrease because of elevated temperatures and excessive CO<sub>2</sub> concentrations. Moreover, increasing internal and external loads need to be disposed of.

Roof Top Units are the ideal solution, particularly in applications with short duct systems, restrictions in available space, or where broader tolerances are allowed for indoor-air temperature and humidity.

Standardized complete units such as Roof Top Units offer great time savings in implementing to building projects. They are quickly designed and feature precisely defined functions as well as good energy efficiency. Roof Top Units are, therefore, predestined for commercial buildings.

robatherm offers customized all-in-one solutions. We set standards in price and performance and, what is more, customers profit from our decade-long experience in manufacturing weatherproof complete units.

**Comfort** thanks to controlled outdoor-air supply.

**Ready-to-connect** systems reducing construction times.

**Supplies** and services from a single source.

# Discover and Use the Advantages.

Quick and easy implementation of projects thanks to standardized solutions.



**Many years** of experience worldwide.

**Quality - proven** and certified.

**Dependability** of design cost and schedules.

**Operating costs** reduced due to optimized casing.

**The advantages** of robatherm Roof Top Units convinced customers all over the world for many years, as we have been building Roof Top Units for all regions and climatic conditions of the world for a long time. Profit from robatherm's experience and competence!

On schedule delivery, easy rigging, convincing quality and excellent performance data add up with uncomplicated installation and efficient operation of the system. See for yourself and use the advantages robatherm offers you!

<b>Thermal transmittance</b>	<b>Class T2</b>
Low transmission heat losses increase the useable energy available in the room. <b>Energy-saving.</b>	
<b>Thermal bridges</b>	<b>Class TB2</b>
Low tendency of condensation inside the casing prolongs the service life. <b>Long-lived.</b>	
<b>Filter bypass leakage</b>	<b>Class F9</b>
Minimal bypass leakage leads to lowest contamination on clean-air side. <b>Clean.</b>	

<b>Casing leakage</b>	<b>Class L1 (M)</b>
Full use of air flow reduces required drive power. <b>Efficient.</b>	
<b>Casing strength</b>	<b>Class D2</b>
High-strength casing design reduces cost and facilitates installation. <b>Rugged.</b>	
<b>Sound insulation</b>	<b>D<sub>e</sub> 31 dB R<sub>w</sub> 43 dB</b>
Excellent sound insulation reduces sound emissions. <b>Silent.</b>	

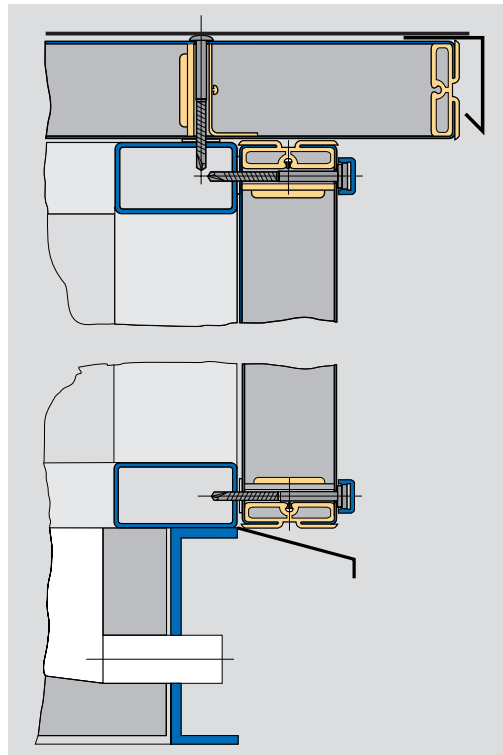


Roof Top Units made by robatherm offer a reliable equipment technology, ensuring comfort and operational reliability. We provide comprehensive services from a single source, also including assembly inspection and unit commissioning. This means considerably reduced cost risks for our customers.

Roof Top Units made by robatherm bear witness to the fact that performance, quality and longevity does not need to be expensive, and that it is possible to operate these systems at low cost.

Apart from the unit concepts, the unit characteristics speak for themselves, given operation costs and longevity are just as vital as the investment cost.

This results in an high planning reliability, assures to stay within budgets and to meet schedules. The ventilation plant will be at an outstanding quality level, providing long lifetime and energy efficient operation.



**Outer shell**  
powder-coated.

**Casing** roof with  
welded plastic  
sheeting.

**Roof overhang** with  
drip lip on all sides.

**Baseframe** with  
sealed flashing.

**Screws** with cover  
caps.

# Supply Air Management for a Good Climate.



**Demand-based cooling of fresh outdoor-air and draught-free supply into rooms for maximum comfort and low energy demand.**

**Reduced energy costs** thanks to free cooling.

**Controlled** night-time ventilation minimizes energy costs.

**Demand-based operation** controlled by timer programs.

**User-friendly** thanks to plain-text display.

**Interlinking** via proprietary network is a standard feature.

**We offer you** plug-in Roof Top Units with added value from a single source. Our units are readily wired and come with a well-engineered control system.

robatherm Roof Top Units with integrated refrigeration have the entire cooling equipment readily installed. The necessary compressors and the condenser units as well as the entire piping are integrated. The cooling circuits are charged and ready to use.

Every Roof Top Unit is provided with our “SmartControl” – a technically mature air management system based on extensive experience and continuous developments.

Allowing free cooling, it includes a freely programmable timer for demand-based ventilation

and air conditioning. The energy demand can thus be reduced without impairing indoor-air quality or comfort.

Smart Control is operated via a plain-text display. Several operator control levels ensure clarity, passwords provide protection against unauthorized access.

Up to 15 Roof Top Units can be interlinked in one network! A single centrally arranged control element is all we need to operate up to 15 systems. Full multifunctional operation including centralized remote maintenance is thus possible with a minimum of operating expenses.

“SmartControl” integrated units control without limiting comfort or service.



The units operate in fully automatic mode. Changeover to “integrated cooling” does not take place as long as “free cooling” is entirely capable of covering the cooling demand.

Changeover to “active night-time cooling” is activated depending on the outdoor and indoor temperatures as well as the timer program.

The energy demand for cooling can thus be considerably reduced, as mechanical cooling is only required during operating times.

The manufacturing process as well as factory acceptance testing of the units comply with DIN ISO 9001. This ensures that the Roof Top Units can be commissioned right after delivery. Cost and time savings during commissioning are quite obvious.

**Fully developed concepts** and standardized units provide our customers quick, specific and competent information concerning design and performance data of a unit.

- ▶ Optimized functions.
- ▶ Optimized performance.
- ▶ Perfect price.

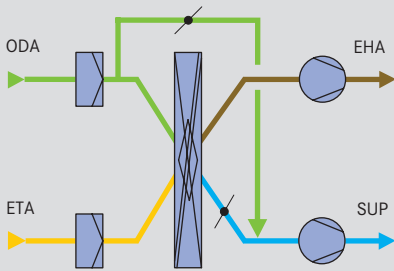
Our units cover a range of air flows from 1,000 m<sup>3</sup>/h to 30,000 m<sup>3</sup>/h. You can quickly select the unit matching your individual needs and request the respective unit data. A decisive advantage, particularly in projects with very short construction times and tight planning deadlines.

You wish further details or a customized design? We are looking forward to receiving your enquiries.

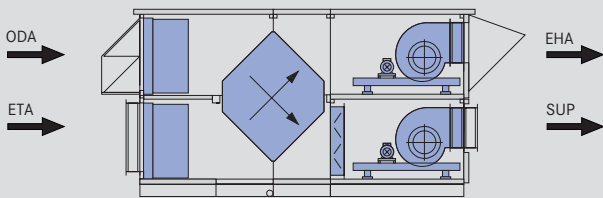
**Integrated refrigeration** based on demand.

**Standardized**, but also customized units.

**Schematic**



**Layout**



Side view

**Roof Top Unit 1**

This design is easy to apply and provides high energy recuperation rates by using counter flow plate heat exchanger systems. Low heating and cooling cost, because of dry HR-Efficiency is up to 80 %. The switchbox comes separately and might be assembled inside the building at the customer's convenience. Ideal solution for schools, playschools or sport halls.

**Technical Data:** <sup>1,2</sup>

Airflow [m³/h]	Capacity HRS [kW]	Capacity heating coil [kW]	Capacity cooling coil [kW]	Power consumption [kW]	Dimensions l/d/h [m]	Weight [kg]
9.000	90,4	-	-	8,2	3,52/1,92/2,12	1.830
8.000	80,8	-	-	6,4	3,37/1,92/2,12	1.710
7.000	70,4	-	-	6,2	3,37/1,61/2,12	1.570
6.000	60,8	-	-	5,0	3,37/1,61/2,12	1.560
5.500	55,4	-	-	4,7	3,06/1,61/2,12	1.420
5.000	50,4	-	-	5,0	2,60/1,92/1,50	1.280
4.500	45,6	-	-	4,1	2,60/1,92/1,50	1.270
4.000	40,3	-	-	3,7	2,60/1,61/1,50	1.140
3.500	35,5	-	-	3,3	2,60/1,61/1,50	1.110
3.000	30,2	-	-	2,9	2,45/1,30/1,50	930

<sup>1</sup> All technical Data based on:

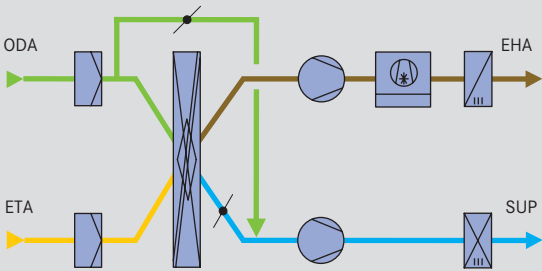
ODA (winter): -12 °C / 90% r.h. (= 1,2 g/kg)      ETA (winter): 22 °C / 40% r.h. (= 6,6 g/kg)  
 SUP (winter): -18 °C / 9% r.h. (= 1,2 g/kg)      EHA (winter): -0 °C / 85% r.h. (= 3,3 g/kg)  
 ODA (summer): 32 °C / 40% r.h. (=11,9 g/kg)      ETA (summer)<sup>13</sup>: 24 °C / 60% r.h. (=11,2 g/kg)  
 SUP (summer): -26 °C / 55% r.h. (=11,9 g/kg)      EHA (summer)<sup>13</sup>: ~30 °C / 41% r.h. (=11,2 g/kg)

External pressure drop: 250 Pa

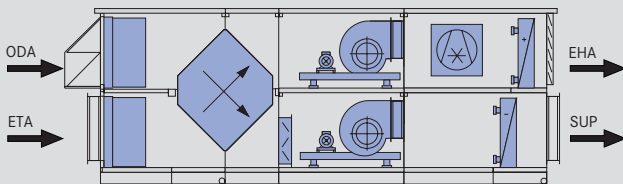
<sup>12</sup> Alternative selections with different conditions are possible.

<sup>13</sup> Additional cooling systems required (e.g. fan coil units).

**Schematic**



**Layout**



Side view

**Roof Top Unit 2**

This design is easy to apply and provides high energy recuperation rates by using counter flow plate heat exchanger systems. DX cooling system for comfortable Supply Air temperatures. Switchboard integrated inside the unit's casing for simple and easy assembly, commissioning and maintenance. Ideal solution for offices, road-house, restaurants, etc.

**Technical Data:** <sup>1,2</sup>

Airflow [m³/h]	Capacity HRS [kW]	Capacity heating coil [kW]	Capacity cooling coil [kW]	Power consumption [kW]	Dimensions l/d/h [m]	Weight [kg]
9.000	90,4	-	31,8	16,3	4,69/1,92/2,12	2.750
8.000	80,8	-	28,3	13,8	4,59/1,92/2,12	2.580
7.000	70,4	-	24,7	12,8	4,59/1,61/2,12	2.480
6.000	60,8	-	21,2	10,7	4,59/1,61/2,12	2.350
5.500	55,4	-	19,4	10,5	4,28/1,61/2,12	2.180
5.000	50,4	-	17,6	8,9	3,98/1,92/1,50	2.030
4.500	45,6	-	15,9	8,1	3,98/1,92/1,50	2.030
4.000	40,3	-	13,1	7,0	3,83/1,61/1,50	1.860
3.500	35,5	-	12,4	6,4	3,83/1,61/1,50	1.830
3.000	30,2	-	9,8	5,1	3,67/1,30/1,50	1.590

<sup>1</sup> All technical Data based on:

ODA (winter): -12 °C / 90% r.h. (= 1,2 g/kg)      ETA (winter): 22 °C / 40% r.h. (= 6,6 g/kg)  
 SUP (winter): -18 °C / 9% r.h. (= 1,2 g/kg)      EHA (winter): -0 °C / 85% r.h. (= 3,3 g/kg)  
 ODA (summer): 32 °C / 40% r.h. (=11,9 g/kg)      ETA (summer): 24 °C / 65% r.h. (=12,1 g/kg)  
 SUP (summer): 17 °C / 96% r.h. (=11,6 g/kg)      EHA (summer): 46 °C / 19% r.h. (=12,1 g/kg)

External pressure drop: 250 Pa

DX-Cooling-System: 2 Step with R407C

<sup>12</sup> Alternative selections with different conditions are possible.



### Roof Top Unit 3

Units designed for high air flows and best efficiency, by using plug fans and high performance energy recovery rotors. Switchboard integrated inside the unit's casing for simple and easy assembly, commissioning and maintenance. Best solution for warehouses, production halls, etc.

#### Technical Data: <sup>1,2</sup>

Airflow [m³/h]	Capacity HRS [kW]	Capacity heating coil [kW]	Capacity cooling coil [kW]	Power consumption [kW]	Dimensions l/d/h [m]	Weight [kg]
25.500	265,6	89,5	-	15,8	4,59/2,59/2,72	4.100
22.700	243,3	75,9	-	13,0	4,59/2,59/2,72	4.100
22.400	223,2	86,1	-	15,0	4,59/2,28/2,72	3.700
20.000	205,5	73,6	-	12,2	4,59/2,28/2,72	3.600
13.350	140,9	44,6	-	7,6	4,59/1,92/2,12	2.800
11.900	129,1	37,8	-	6,6	4,59/1,92/2,12	2.800
11.120	110,5	42,7	-	9,2	4,23/1,61/2,12	2.300
9.900	101,6	36,4	-	7,4	4,23/1,61/2,12	2.300
5.900	61,4	20,7	-	4,0	3,67/1,30/1,50	1.600
5.300	56,6	17,7	-	3,4	3,67/1,30/1,50	1.600

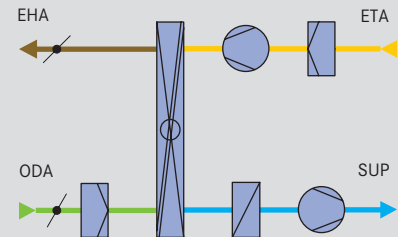
<sup>1</sup> All technical Data based on:

ODA (winter): -12°C / 90% r.h. (= 1,2 g/kg)      ETA (winter): 22°C / 40% r.h. (= 6,6 g/kg)  
 SUP (winter): 22°C / 9% r.h. (= 1,2 g/kg)      EHA (winter): ~ 0°C / 95% r.h. (= 3,6 g/kg)  
 ODA (summer): 32°C / 40% r.h. (=11,9 g/kg)      ETA (summer)<sup>3</sup>: 24°C / 60% r.h. (=11,2 g/kg)  
 SUP (summer): ~ 27°C / 55% r.h. (=11,8 g/kg)      EHA (summer)<sup>3</sup>: ~ 30°C / 43% r.h. (=11,2 g/kg)  
 External pressure drop: 250 Pa

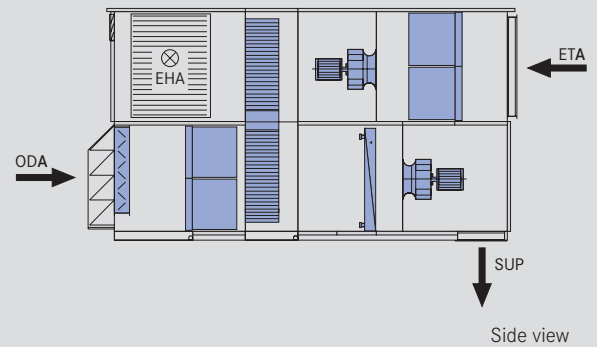
<sup>2</sup> Alternative selections with different conditions are possible.

<sup>3</sup> Additional cooling systems required (e.g. fan coil units).

### Schematic



### Layout



### Roof Top Unit 4

High performance stand alone heat pump Roof Top Unit. Fresh air treatment without any piping. No installation of new or extension of existing central heating equipment necessary. Switchboard integrated inside the Unit. Ideal solution if no heating or cooling supply is available. Also applicable for warehouses, home and garden stores, supermarkets, etc.

#### Technical Data: <sup>1,2</sup>

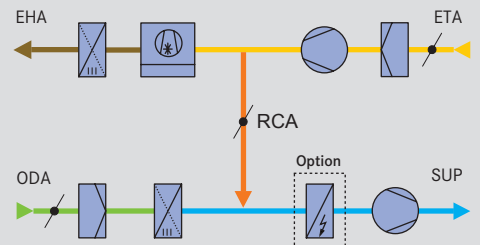
Airflow [m³/h]	Capacity HRS [kW]	Capacity heating coil [kW]	Capacity cooling coil [kW]	Power consumption [kW]	Dimensions l/d/h [m]	Weight [kg]
26.700	172,6	124,0	161,8	181	5,81/3,73/2,05	4.900
22.200	142,0	96,6	134,5	143	5,81/3,73/1,74	4.700
18.500	121,4	82,8	112,1	125	5,51/3,73/1,43	4.100
13.800	90,6	57,0	83,6	88	5,51/3,12/1,43	3.500
11.000	71,8	45,6	66,7	70	5,51/3,12/1,13	3.100

<sup>1</sup> All technical Data based on:

ODA (winter): -12°C / 90% r.h. (= 1,2 g/kg)      ETA (winter): 22°C / 40% r.h. (= 6,6 g/kg)  
 SUP (winter): ~ 20°C / 8% r.h. (= 1,2 g/kg)      EHA (winter): ~ 7°C / 95% r.h. (= 6,0 g/kg)  
 ODA (summer): 32°C / 40% r.h. (=11,9 g/kg)      ETA (summer): 24°C / 65% r.h. (=12,1 g/kg)  
 SUP (summer): 16°C / 98% r.h. (=11,3 g/kg)      EHA (summer): ~ 47°C / 17% r.h. (=12,1 g/kg)  
 External pressure drop: 250 Pa      Heat-Pump-System: 3 step with R407C

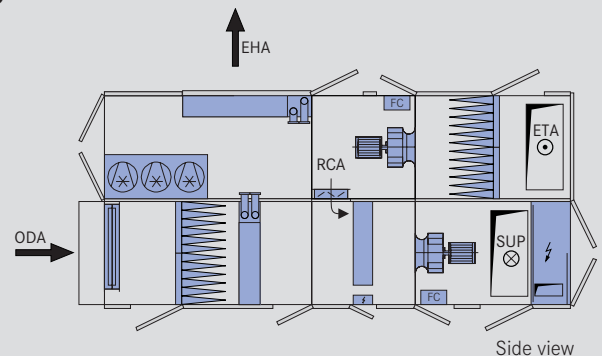
<sup>2</sup> Alternative selections with different conditions are possible.

### Schematic



In case of existing heating systems the E-Heater can be removed or changed to other heating coils.

### Layout



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.



KIA, Motors, Zilina, Slovakia

## 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, Urenco  
**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.



# robatherm

the air handling company

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