

TIME ec

Compact Air Handling Unit



TIME ec

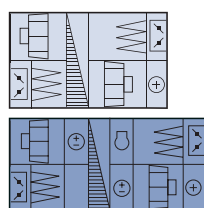


This compact air handling unit with energy saving EC motors and integrated control system is available in 6 sizes with airflows from 750-

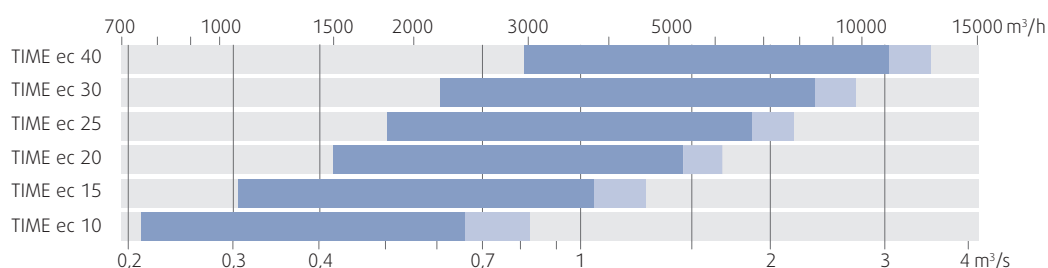
12.500 m³/h. TIME ec is delivered with rotary heat exchanger or counterflow heat exchanger. TIME ec is based on Systemair's well-known

technology in production of air handling units based on more than 40 years of experience. TIME ec is easy to calculate, configure, and order.

TIME ec with rotary heat exchanger, airflow capacities 750-12.500 m³/h in 6 sizes

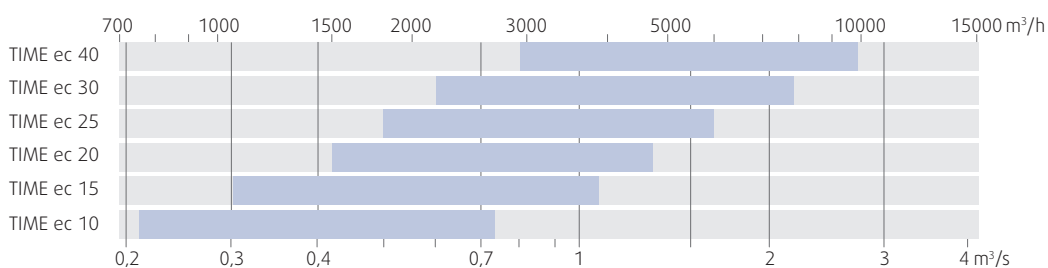
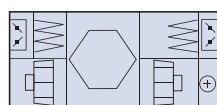


With DVU-HP

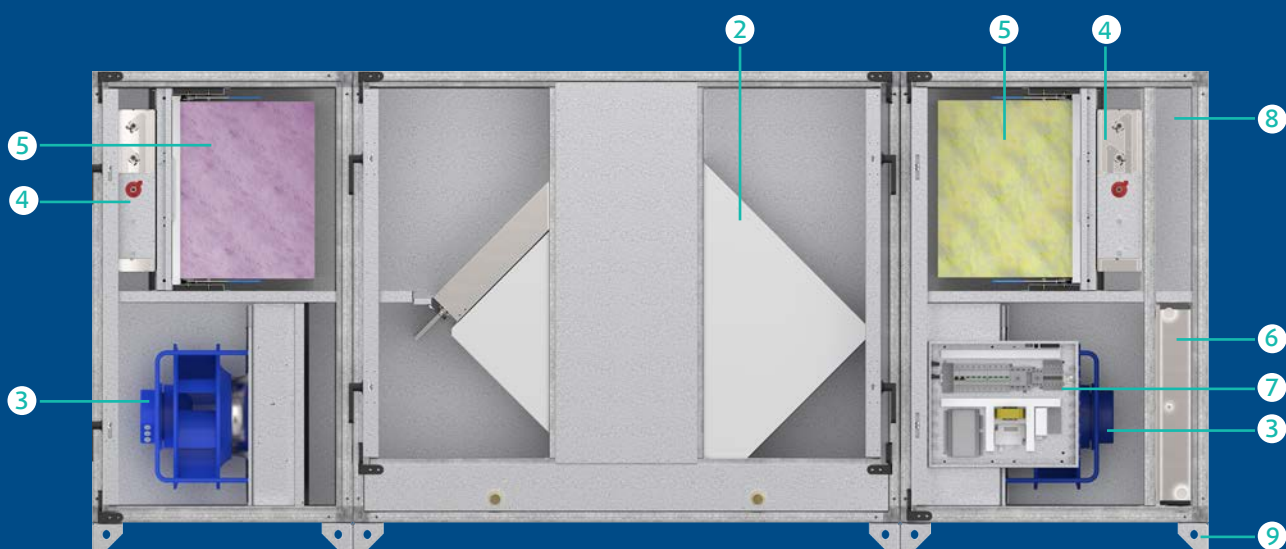
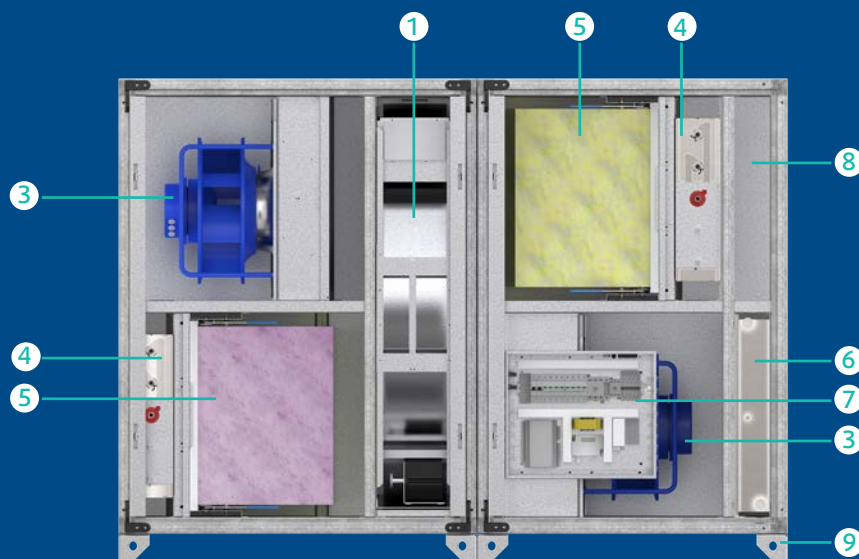


Recommended airflow for TIME ec with external pressure of 250 Pa and max SFP 2.1 kW/(m³/s) in combination with rotary heat exchanger and hot water coil plus integrated reversible heat pump system DVU-HP. Note that supply and extract dampers, hot water coils and DVU-HP are additional options. Other combinations and exact values must be calculated in SystemairCAD.

TIME ec with counterflow heat exchanger, airflow capacities 750-9.900 m³/h in 6 sizes



Recommended airflow for TIME ec with external pressure of 250 Pa and max SFP 2.1 kW/(m³/s) in combination with counterflow heat exchanger and hot water coil. Note that supply and extract damper and hot water coils are additional options. Other combinations and exact values must be calculated in SystemairCAD.



1 Rotary heat exchanger is used when the need for heat recovery is considerable. At the same time it can recover humidity from the hot extract air. It is very energy efficient and requires limited space due to the short length. Efficiency up to 85%, variable rotation speed for adjusted efficiency, purging sector, plus alarm if unintentional stop.

2 Counterflow heat exchanger is often used where there are special requirements of separation of the airflows, for example to avoid the transfer of odours to the supply air. As humidity cannot be transferred between the airflows it can be used for dehumidification.

Efficiency up to 90%, temperature sensor and modulating by-pass damper prevent ice build-up.

3 EC-motors, low energy consumption, good control properties, high efficiency maintained at small loads, low noise level and short length. Safety screen is standard.

4 Supply and extract damper, air tightness class 3 (EN 1751), aerodynamically damper blades in extruded aluminum with rubber sealing, steel rods and brass bearings, actuators; on/off or spring-return (additional option).

5 Supply and extract filters, bag filters in filter quality M5, F7, F7 City-Flo (EN 779), fixed

with filter rails that ensure the tightness requirements (EN 1886), handle for easy replacement, alarm when the filters need to be replaced.

6 Hot water coil, designed for temperature up to 100 °C and pressure up to 10 Bar. The coil is secured against frost.

7 Integrated control system, installed from factory. See page 5.

8 Casing complies with air tightness class L2, has closed frame profiles of steel and panels with 50 mm isolation.

9 Supporting legs, made from strong galvanized steel and equipped with adjustable feet.

Air Handling Units with Great Flexibility

Future building projects call for air handling units with great flexibility. This is met by a variety of many different combinations. Below is an overview of standard functions and the most common additional options.

Standard

- Rotary or counterflow heat exchanger.
- Plug fans with EC motors (available in various sizes in each unit size for optimal operation economy).
- Safety screen of fan sections.
- Integrated control systems (see page 5).
- Supply and extract filters; filter quality M5, F7, F7 City-Flo.
- Supporting legs with adjustable feet, only for indoor units.

Additional options

- Supply and extract damper with actuators; on/off or spring-return.
- Integrated reversible heat pump system DVU-HP, stepless controllable.
- Hot water coil.
- Electrical heater.
- Cooling coil; cold water or DX.
- Change-over coil.
- Valves with actuators.
- Sound attenuator section with baffles standard and baffles for dry or wet cleaning.
- Bitumen roof, strengtened with strong polyester bitumen material.
- Steel profile roof, trapezoidal roof plates, alu-zink steel profiles.
- Base frame, for roof units and indoor units, in strong galvanized steel profiles with lift brackets.
- Supply and extract filters; filter quality M5, F7, F7 City-Flo.



Control System

TIME ec is delivered with fully tested control system ready for operation. It is a user-friendly system where functions and parameters are selected from the external control panel. The control panel can be placed freely installed away from the unit and be used as a remote control. The main operational data are displayed continuously on the control panel display, including alarms, operating values, operating status, and time settings. Start-up is simplified as the control system is pre-installed according to order notes with temperatures, time settings, and regulatory sequences. The settings can be changed easily to other operational values as required.

Standard

- Control panel.
- Week schedule.
- Choose between:
 - Temperature control: Cascaded room temperature, supply air temperature, outdoor temperature compensated supply air temperature, outdoor temperature dependent on switching between room control, and supply air control.
 - Air control: 2 fixed airflows, constant duct pressure (VAV), constant duct pressure with extract fan as slave.
- Extended running.
- Night cooling.
- Cooling recovery.
- Filter guard on supply and extract filter.

- Alarm and safety functions.
- Readout of EC blue fan data: Airflow, pressure, and SFP.
- Readout of efficiency on the heat exchanger.
- 230 V power outlet.
- Supply disconnecting device for control system.
- Supply disconnecting device for light and power outlet.

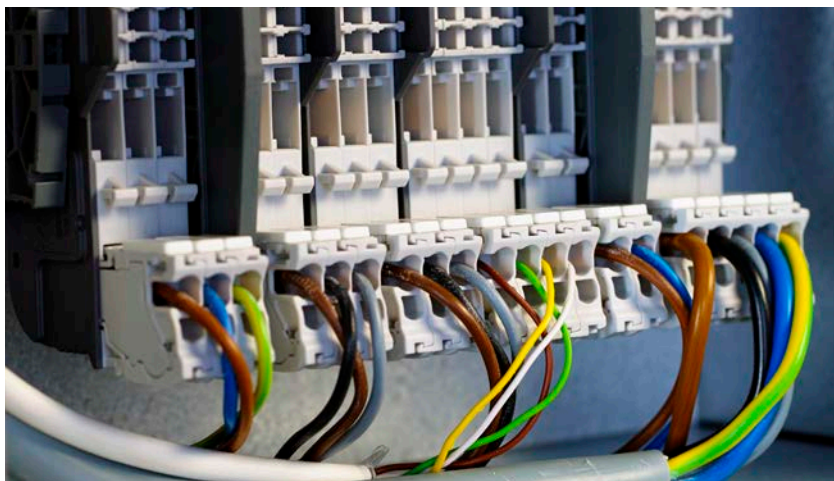
Additional options

- External fire signal or 2 pcs of fire thermostats.
- Heating coil, control plus frost protection.
- Electrical heater, modulating with overheating fuse and control.
- Control for cooling coil.

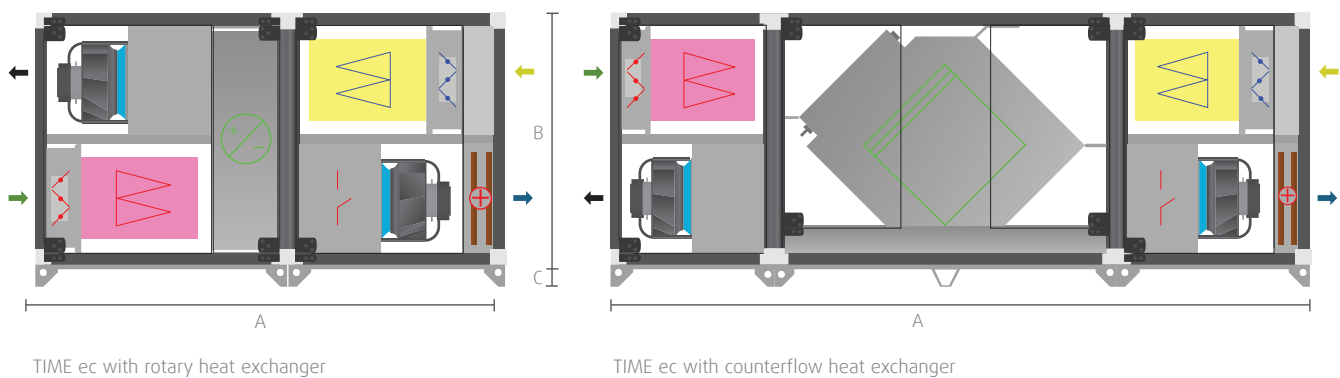
- Stepless control for DVU-HP heat pump.
- Heating and cooling valves incl. actuator.
- Supply and extract dampers and damper actuators.
- Prepared for DDA module "RCD type B" block.
- Connecting of TOUCH-panel TCV is possible.

BMS communication configured via the control panel

- Integrated BACnet IP or MS/TP.
- Integrated Modbus RTU via RS485 or TCP/IP.
- Updated WEB master standard.
- LON can be added.



Dimensions



TIME ec with rotary heat exchanger						
TIME ec	10	15	20	25	30	40
A: Length	2090	2090	2090	2090	2090	2090
B: Height	970	1120	1270	1420	1570	1720
C: Height of feet	100	100	100	100	100	100
Width	970	1120	1270	1420	1570	1720
Weight	440	460	590	665	730	970

The above-mentioned dimensions and weights are a combination of rotary heat exchanger and water coil. Dimensions and weights of other combinations must be calculated in SystemairCAD. Supplied in 2 sections (outdoor model in 1 section). Note that supply and extract dampers and hot water coils are additional options.

TIME ec with counterflow heat exchanger						
TIME ec	10	15	20	25	30	40
A: Length	3210	3360	3510	3510	3810	3810
B: Height	970	1120	1270	1420	1570	1720
C: Height of feet	100	100	100	100	100	100
Width	970	1120	1270	1420	1570	1720
Weight	542	634	782	864	1131	1248

The above-mentioned dimensions and weights are a combination of counterflow heat exchanger and water coil. Dimensions and weights of other combinations must be calculated in SystemairCAD. Supplied in 3 sections (outdoor model in 1 section). Note that supply and extract dampers and hot water coils are additional options.

SystemairCAD

To ensure optimal dimensioning and configuration of the air handling unit's functions, we have developed the design programme SystemairCAD. The programme is very user-friendly and facilitates a simple and quick way to combine unit functions as needed.

When you have completed the design of the air handling unit, SystemairCAD automatically performs all technical calculations and documentation. The technical documentation is presented as a pdf-report specifically for the chosen air handling unit. Furthermore, drawings on the specific combination will be included in the report. SystemairCAD can also generate a complete specification text that is easy to adjust and copy to the template of tender. This ensures that all values are correct.

Systemair Plug-ins

The drawn to scale drawings from SystemairCAD can easily be exported to other CAD software. SystemairCAD has plug-ins for the CAD software MagiCAD for AutoCAD and Revit. The plug-ins make it possible to insert Systemair air handling units directly into MagiCAD, AutoCAD, and Revit. This makes it fast to connect the air handling unit to the ducting of the drawing in the overall BIM model.

SystemairCAD can also export DXF files (2D or 3D) and DMR files of a 3D CAD model to Autodesk Revit via an import plug-in.

SystemairCAD is free for download on systemair.com or local Systemair website.

You are always welcome to call your local Systemair office for technical guidance or quotations.



11-05-2015 Air handling unit design SystemairCAD Version: C2015-04.06.D9 Danvent DV25	
Project:	
Humidity efficiency	33.3
Heat exchanger type	E/EY - Enthalpy heat exchanger
Efficiency (Wave height)	D14 - High
Rotor drive	Variable speed
Electrical data	1x230V, 40W, 0.7Amp
Heat pump	
Air flow	Supply: 6000, Extract: 6000
Pressure drop	74
Face velocity for the coil	2.7
WINTER	
Air temperature before/after	14.6/22.0
Air relative humidity before/after	43.1/27.1
Capacity	15.02
Refrigerant temperature	27.6
Condensate	11.3
Used capacity	17.3
Absorbed power, at operating point	37.9
EER, compressor system	3.1
EER total, compressor system + rotary heat exchanger	4.9
COP total, compressor system + rotary heat exchanger	11.3
SUMMER	
Air temperature before/after	22.8/16.0
Air relative humidity before/after	64.1/55.5
Capacity	15.44
Refrigerant temperature	10.6
Sensible cooling in % of total cooling	89
Condensate	0.03
Used capacity at working conditions	37.9
Absorbed power, at operating point	3.1
EER, compressor system	4.9
EER total, compressor system + rotary heat exchanger	11.3
Tube material	Cu
Fin material	Al
Fin spacing	2.5
Tray material	Stainless steel
Tray / Amount	R410A
Refrigerant	ZPD61+ZP61
Compressor	3*400V+N+PE, 50



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