

Electrical cabinet

Integrated in the unit frame, complete with fan speed control, humidifier steering, temperature and humidity control system. With main switch, all necessary fuses, motor protection switches, contactor etc. wired up to terminals.



Operating device and micro-processor control system

Programmable micro-processor control system with all necessary analog and digital in- and outputs. Communication via ModBus, BACnet or via GSM-modem. Operating device as graphic touchscreen display.



Let's talk
about
energy
saving



multiCENT coolEnergy

Central Station Air Handling Unit Type TW coolEnergy



FULLY
EQUIPPED
AIR HAN-
DLING UNITS



INTEGRATED
REFRIGERATION
PLANT, ELECTRICAL
CABINET AND
CONTROL SYSTEM



FOR
PLANTS
WITHOUT
CHILLED
WATER
SUPPLY

coolEnergy air handling unit suitable for:

- air flow volume from 1.500 m³/h up to approx. 50.000 m³/h
- cooling capacity from 8 to 800 kW
- SFP-Level < 2.200 Ws/m³
- COP/EER > 4,0 to 5,5
- SEER-Heating > 8,0

Construction design

The “Cool Energy” air handling units are combined with twin-coil system, plate heat exchanger or energy recovery wheel permits an energy-saving heat recovery. Due to that the efficiency on the refrigeration system can be increased sharply.

In cooling season this combination can be used for energy recovery (pre-cooling).

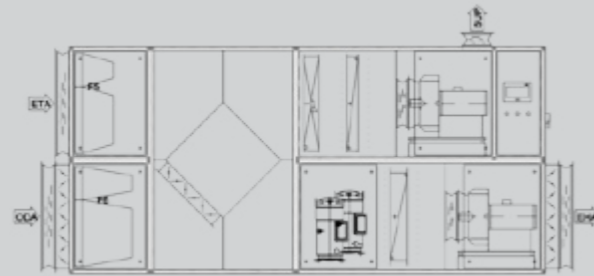
The refrigeration condenser can be implemented as air-cooled in return air, water-cooled or as a remote condenser for outdoor installation.

Provided refrigerants are R407C or R134a, others like R404A, R410A are available on request.

Combined supply and return air unit

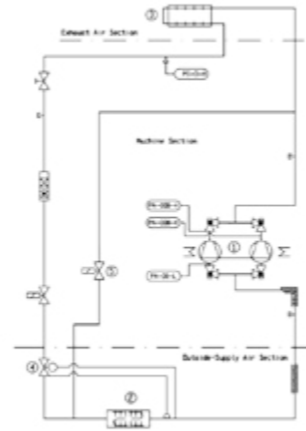
- bag filter
- plate heat exchanger for energy recovery (pre-

- heating in winter and pre-cooling in summer)
- PHW-reheater
- air-cooled condenser in return air
- fan sections as high performance plug fans without scroll
- refrigeration section with two scroll compressors
- built-in electrical cabinet and control system



Refrigeration system

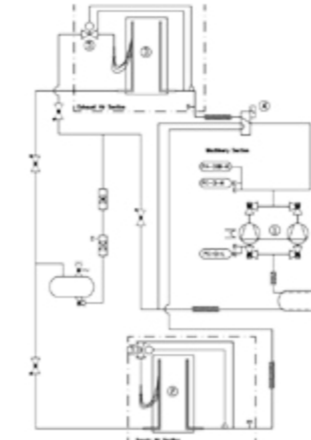
The refrigeration system is engineered with one or two independent refrigeration circuits and with one to four compressors. As required the refrigeration circuits can be provided with hot gas bypass control, condenser capacity control, liquid receiver or as reversible heat pump.



Refrigeration circuit cooling only:

with air-cooled condenser in return air, one refrigerant circuit with two scroll compressors and indirect hot gas bypass capacity control as electric valve for signal 0 to10 V.

- 1 scroll compressor
- 2 evaporator– supply air
- 3 condenser– return air
- 4 expansion valve
- 5 hot gas bypass valve



Refrigeration circuit cooling and heating:

with air-cooled condenser in return air, one refrigerant circuit with two scroll compressors as reversible heat pump.

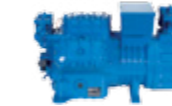
- 1 scroll-compressor
- 2 supply air coil
- 3 return air coil
- 4 change over valve
- 5 expansion valve

The refrigeration plant is provided with following range of capacity and compressor constructions:



Scroll compressor

In hermetic design with suction-cooled motor, motor protection, crankcase heater and rotalock valves. Option: electronic soft starter reducing the starting current.



Reciprocating compressor

In semi-hermetic design with suction-cooled motor, motor protection, oil pump and oil pressure switch, crankcase heater, rotalock valves and capacity control by cylinder deactivation. Option: electronic soft starter reducing the starting current.



Screw compressor

In semi-hermetic design with suction-cooled motor, motor protection, oil heater, rotalock valves and capacity control. Option: electronic soft starter reducing the starting current.



Turbocor compressor

As semi-hermetic two-stage centrifugal compressor, oil free with electromagnetic bearings, capacity control by speed control in the range of 18000 to 48000 rpm. Maximum economic efficiency partial load operation. Soft starter standard with starting current less than 5A.