AH Climate Control Unit horizontal

- Control of all cleanroom parameters
- Control unit integrated and expandable
- Remote maintenance and online monitoring possible

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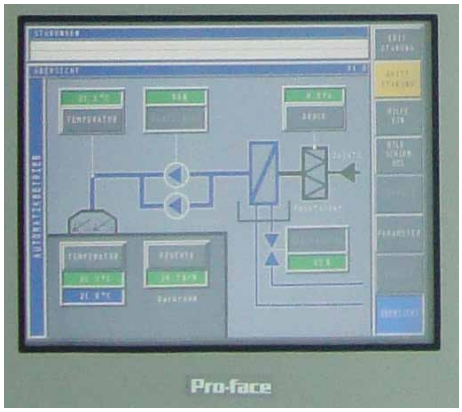
User Interface

Touchscreen PROFACE



LCD BEIJER E1032

The user interface (HMI) incorporates modern touchscreen panels. On the touchscreen displays, complete processes can be depicted with run-off schedules, the corresponding process parameters the and control variables. This makes the visualization easy to understand and clear.

Alarm and fault messages as well as trend analyzes make operation very user-friendly. The sensitive areas, e.g. the parameters of the control circuits can be protected by passwords against changes. A parameter set can also be stored as a default value. Thus, a defined operating point can be established again and again.

For research as well as for production, a complete process documentation is crucial. Therefore, information such as e.g. temperature sequences can be passed on to external computers. A superordinate message or a command of the control system can also be processed via this communication.

Control / Electrical Cabinet

All power and control components are accommodated in a compact way. For customer-specific extensions such as lock control, access control, etc., contacts are provided.

PLC can be selected between SIEMENS S1200 or MITSUBISHI FX.

The system can be equipped for remote maintenance and online monitoring.

The following control circuits can be implemented and optimized according to customer specifications:

- Temperature control in the clean room / climatic chamber / laboratory → accuracy up to +/- 0.2 °C
- Humidification and dehumidification adjustable in the clean room / climatic chamber / laboratory → +/- 5% rh
- Pressure regulator / cascade controller for several cleanrooms / laboratory areas

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Cooling Compressor
plus condenser unit inverter controlled

SIT uses only robust, vibration and low noise piston compressors, which are generally operated with R134a refrigerant.

The speed of the compressors is adjusted adaptively and thus the energy requirement is optimized. Based on uncompromising quality of the components, the systems operate very reliably and are therefore low maintenance.

Thanks to the low vibrations and noise, SIT‘s air-conditioning units can also be placed within measuring laboratories and provide optimal conditions.

Radial Ventilator

Speed-controlled EC fans are very efficient. Therefore they are used by SIT for clean room applications and air-conditioning. The engine is directly coupled to the impeller, eliminating the need for maintenance-free V-belts. The control for the electronically commutated drive (EC) is integrated in the motor. This compact drive solution allows efficiencies of up to 90%.

During operation, the volume of air conveyed can be removed by filter contamination. However, this volume flow is decisive for the operating point of a clean room system. To compensate this, SIT measures the air volume and controls the flow rate through the speed of the fan. The process conditions remain constant over the lifetime of the filters.

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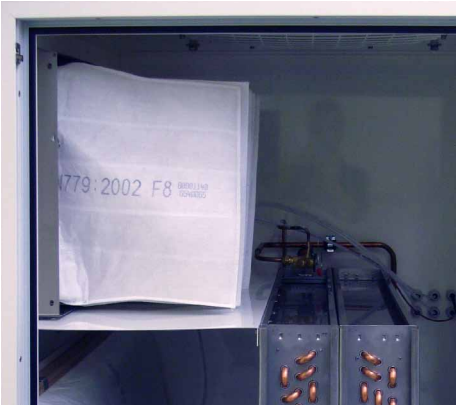
Prefilter / Fine Filter



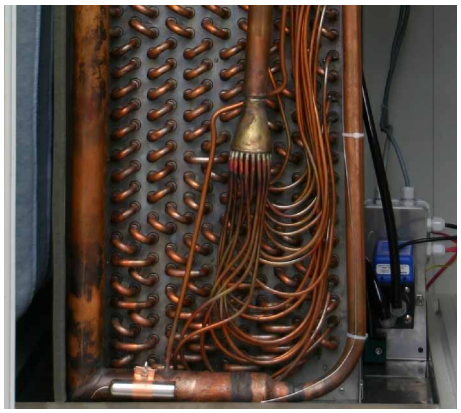
The return air filters ISO ePM1 80% as well as the fresh air filters ISO ePM1 80% are designed for long maintenance intervals.

The pocket filters have a high dust storage capacity. Thus, a long operating time of the SIT systems can be ensured.

The pressure drop is measured across all filters. This monitors the contamination and displays any filter changes on the display.

The service doors ensure easy access and make maintenance easy and fast.

Evaporator



If a cooling water circuit is used, the control can be implemented via a throttle circuit or injection circuit with a separate circulating pump. The design is specified by the customer-specific cooling water treatment.

If a refrigeration compressor is to be used, a heat exchanger with direct evaporator is installed for cooling purposes. A post-heating heater is used to heat the air and control the temperature.

The use of a continuous distribution valve on the hot-gas side allows a precise control of the air temperature. As a second condenser stage, a water-cooled plate heat exchanger can be installed or an air-cooled external condenser can be used.

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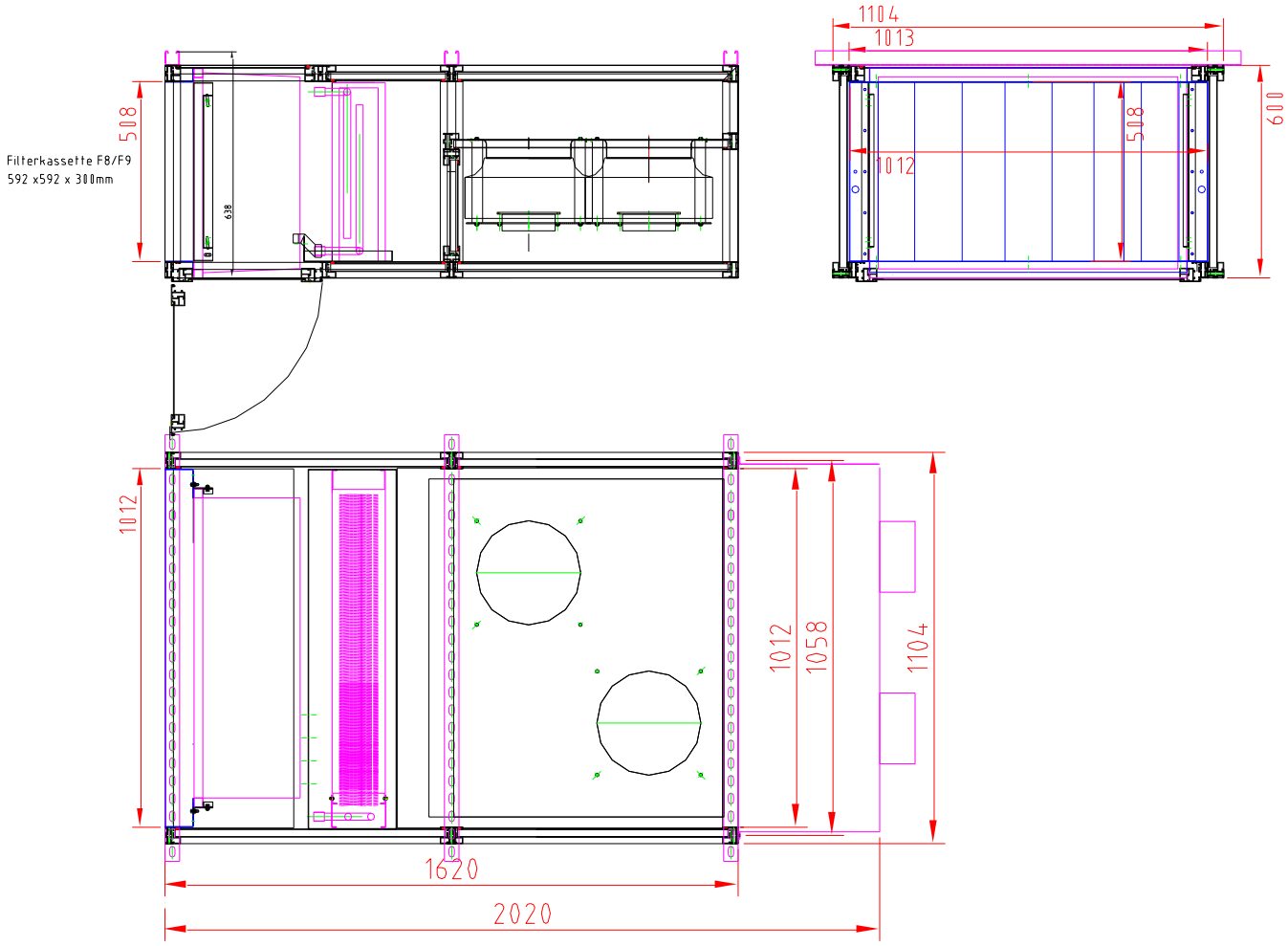
Specifications Airhandler

Version	AH4000h	AH7000h
Dimensions (l x w x h)	1.62 x 1.01 x 0.6 m	1.4 x 1.0 x 2.23 m
Max. Air Volume	4'000 m^3/h	8'000 m^3/h
Cooling Capacity	5 kW	16 kW
Temperature Control	20°C - 25°C ±1,0°C (optional ± 0.2°C)	

Dimensions AH4000h



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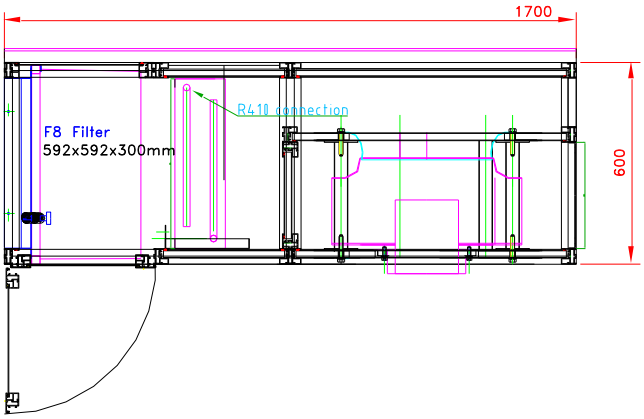
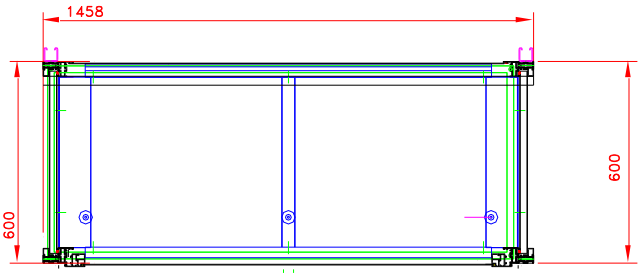
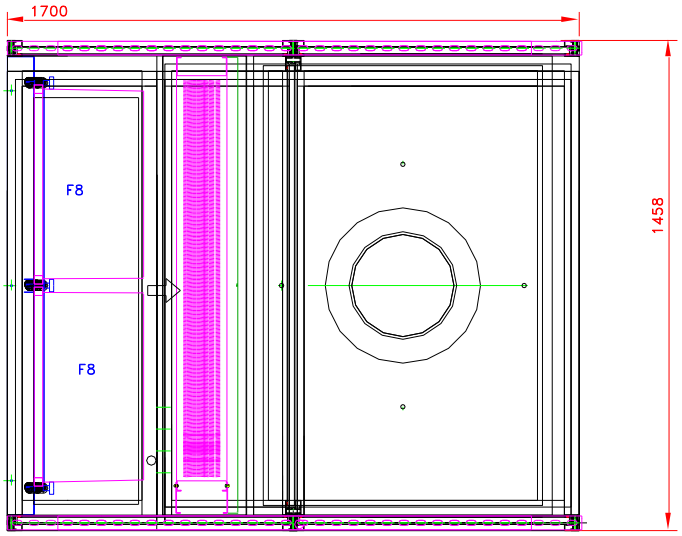
Dimensions AH7000h







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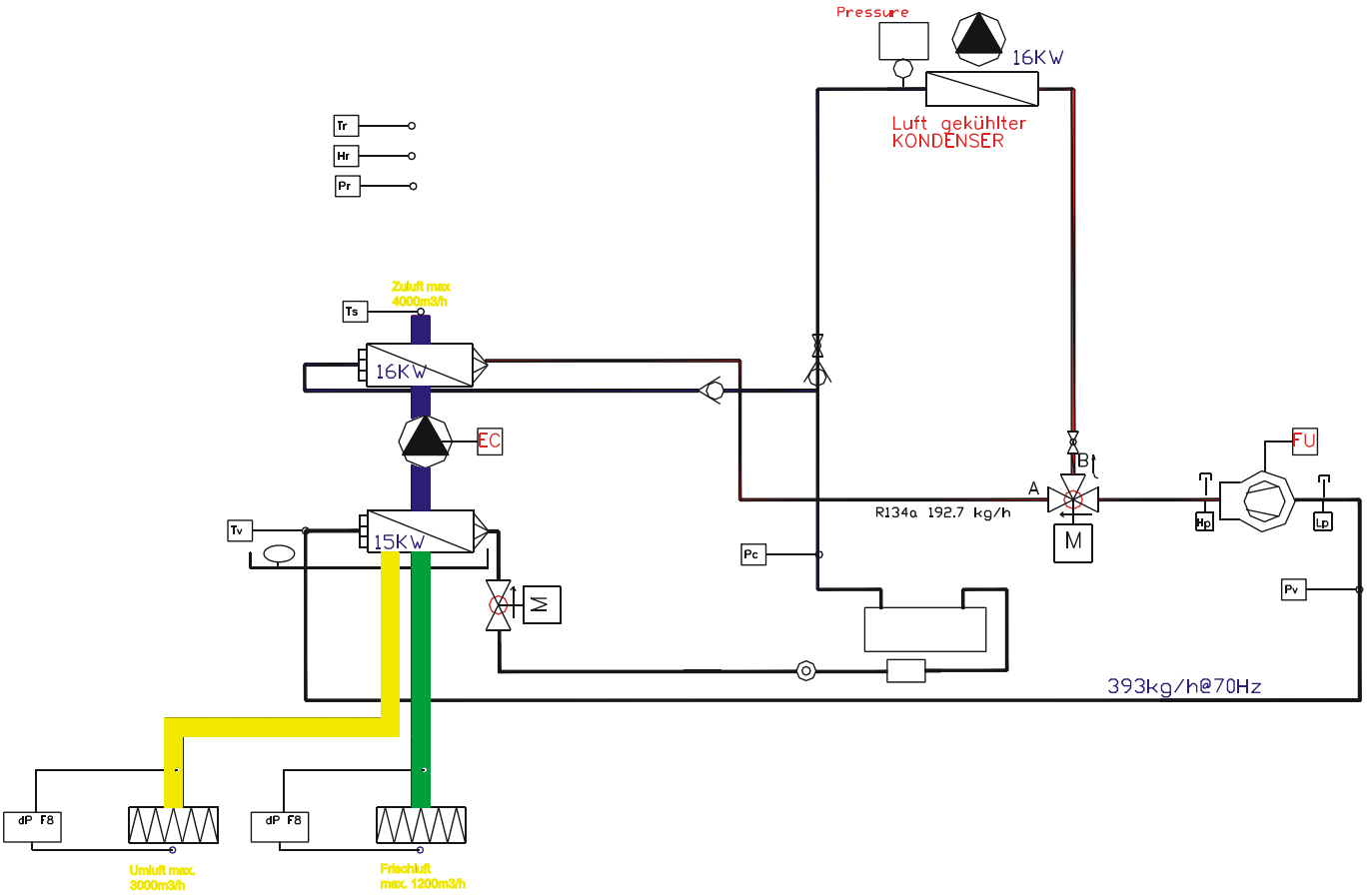
Fuctional Diagram SIT Airhandler



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