

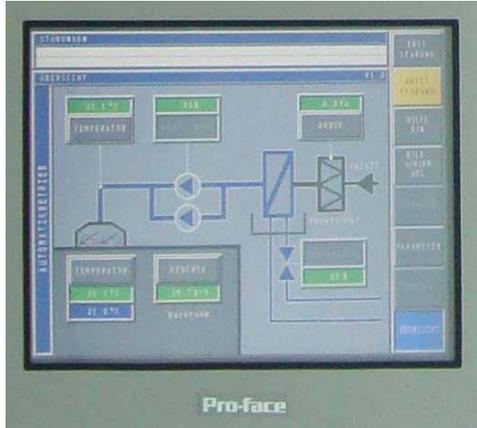
# AH Climate Control Unit vertical

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



## User Interface

Touchscreen PROFACE



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

Alarm and error 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.

LCD BEIJER E1032



For research as well as for production, a complete process documentation is crucial. Therefore, information such as temperature curves 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 clean-rooms / laboratory areas

## Cooling Compressor with speed control



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.

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

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

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

## Evaporator / Dehumidifier / Afterheater



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.

## Condenser /Capacitor



Condensers / capacitors are placed horizontally or vertically outside the building. The size depends on the installed cooling capacity. The condensation pressure is controlled by the speed of the fan.

Alternatively, a heat exchanger can be installed and fitted with an in-house cooling water system get connected.

If required, SIT also offers cold water systems for process cooling.

## Regulated Humidity



Steam generators are installed for the active control of the moisture, depending on the application 5-20kg/h of steam power. SIT specifies the entire climate system specifically for the requirements to ensure optimum stability of the room climate.

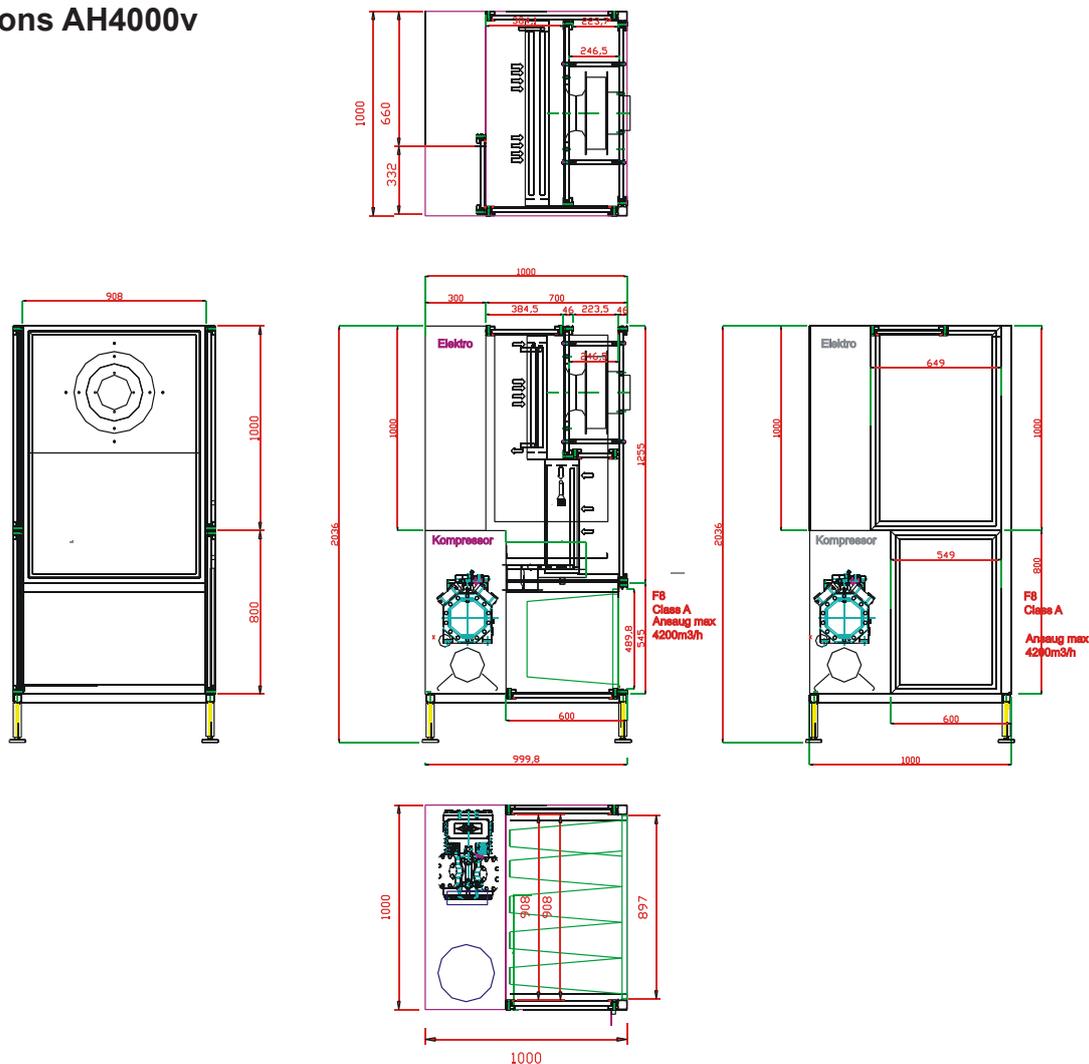
In order to allow low-maintenance operation for humidification, it is

recommended to use DI water. SIT can also supply the necessary processing stations for this purpose. With the modular design of the SIT air-conditioning systems, the right solution can be realized for every application profile.

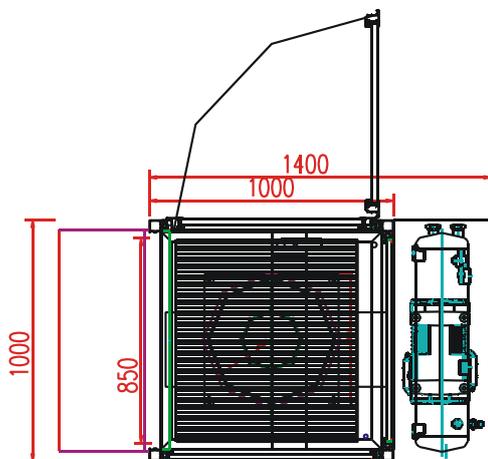
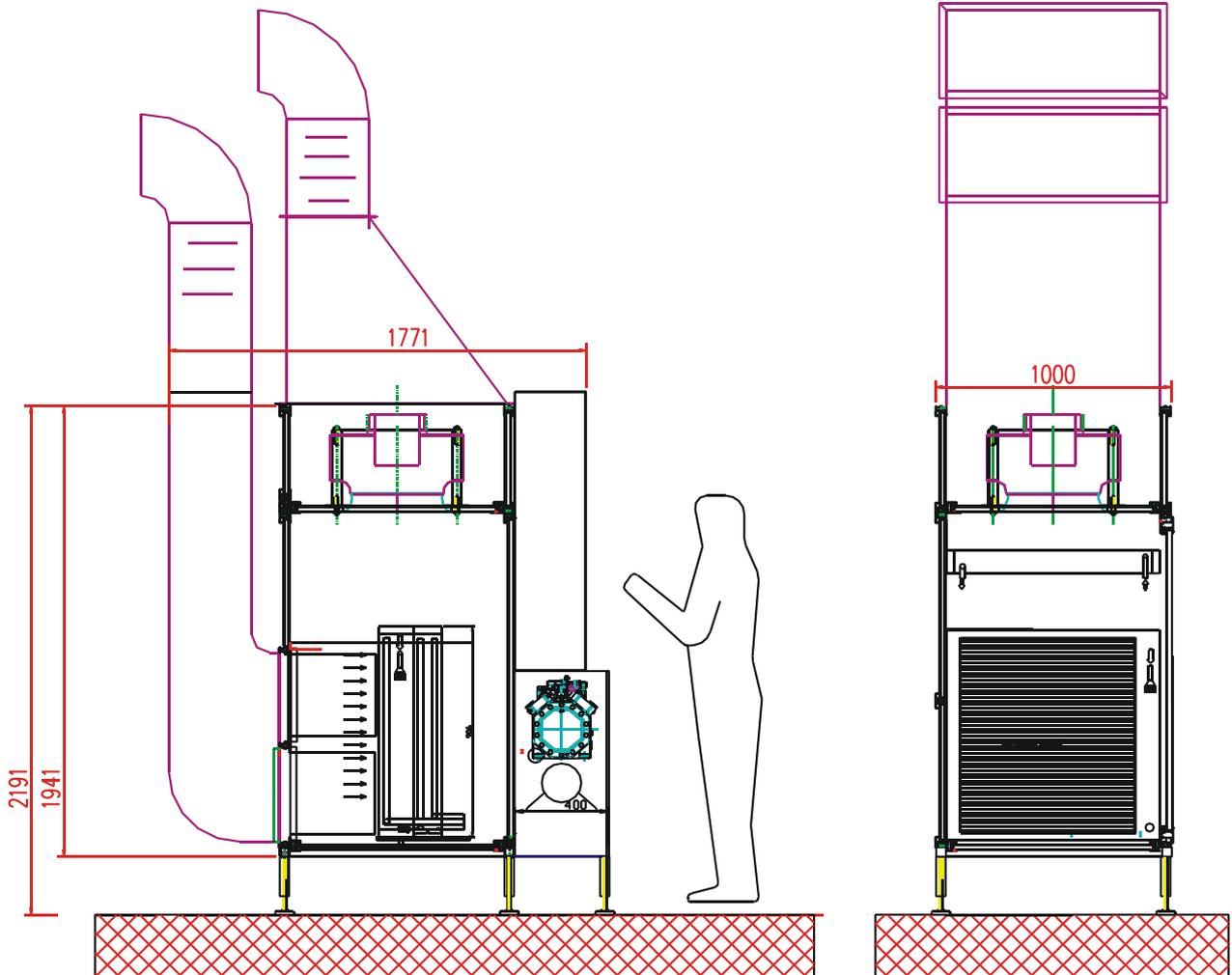
## Specifications Airhandler

Version	AH4000v	AH7000v	AH14000v
Dimensions (l x w x h)	1.1 x 0.8 x 1.6 m	1.4 x 1.0 x 2.23 m	1.4 x 2.0 x 2.23 m
Max. Air Volume	4'000 m <sup>3</sup> /h	8'000 m <sup>3</sup> /h	14'000 m <sup>3</sup> /h
Return Air Volume	3'600 m <sup>3</sup> /h	7'200 m <sup>3</sup> /h	12'800 m <sup>3</sup> /h
Fresh Air Volume	400 m <sup>3</sup> /h	800 m <sup>3</sup> /h	1'200 m <sup>3</sup> /h
Cooling Capacity	8 kW	16 kW	32 kW
Temperature Control	20°C - 25°C ±1,0°C (optional ± 0.2°C)		
Humidity	Optional moisture control with humidification and dehumidification		

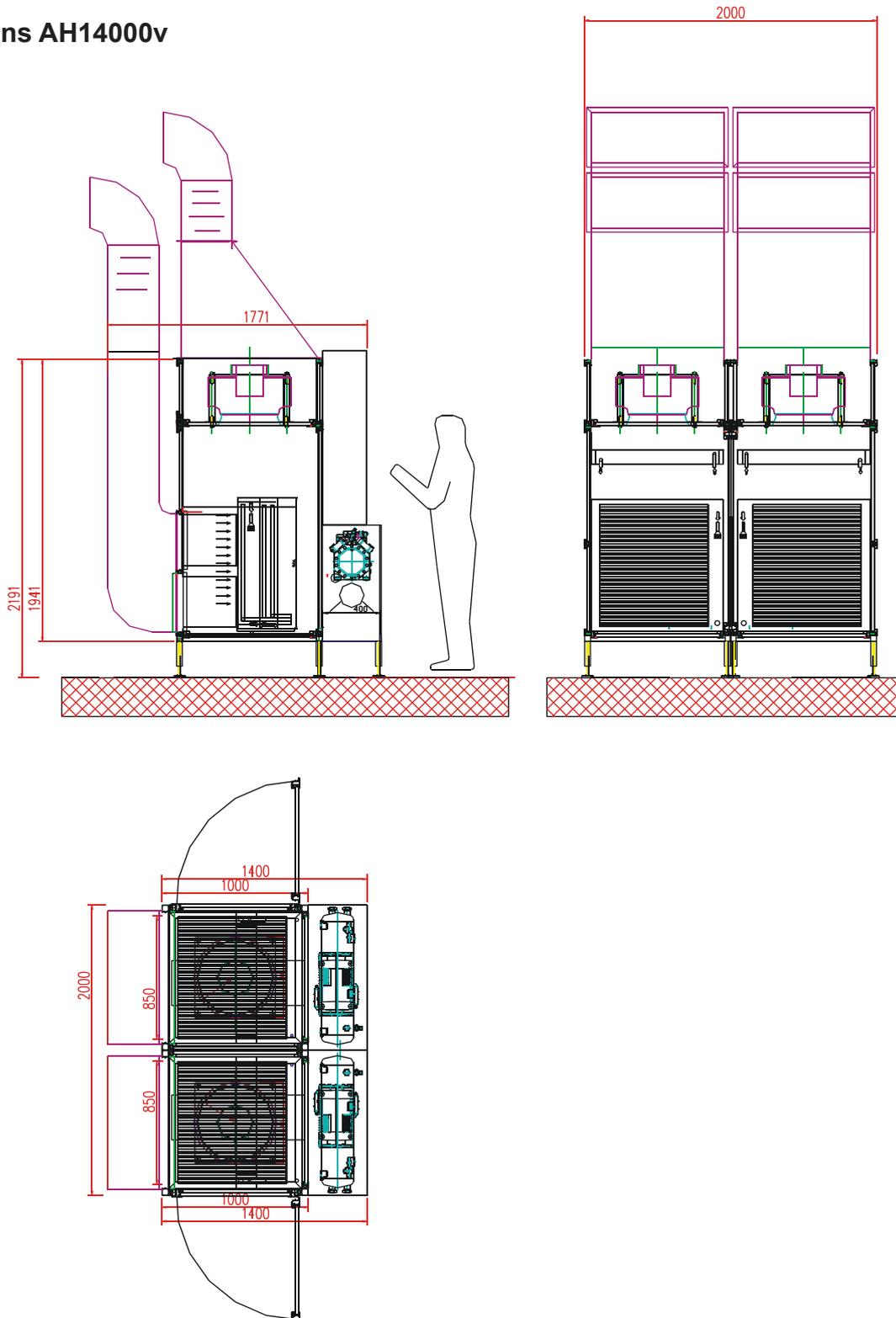
## Dimensions AH4000v



Dimensions AH7000v

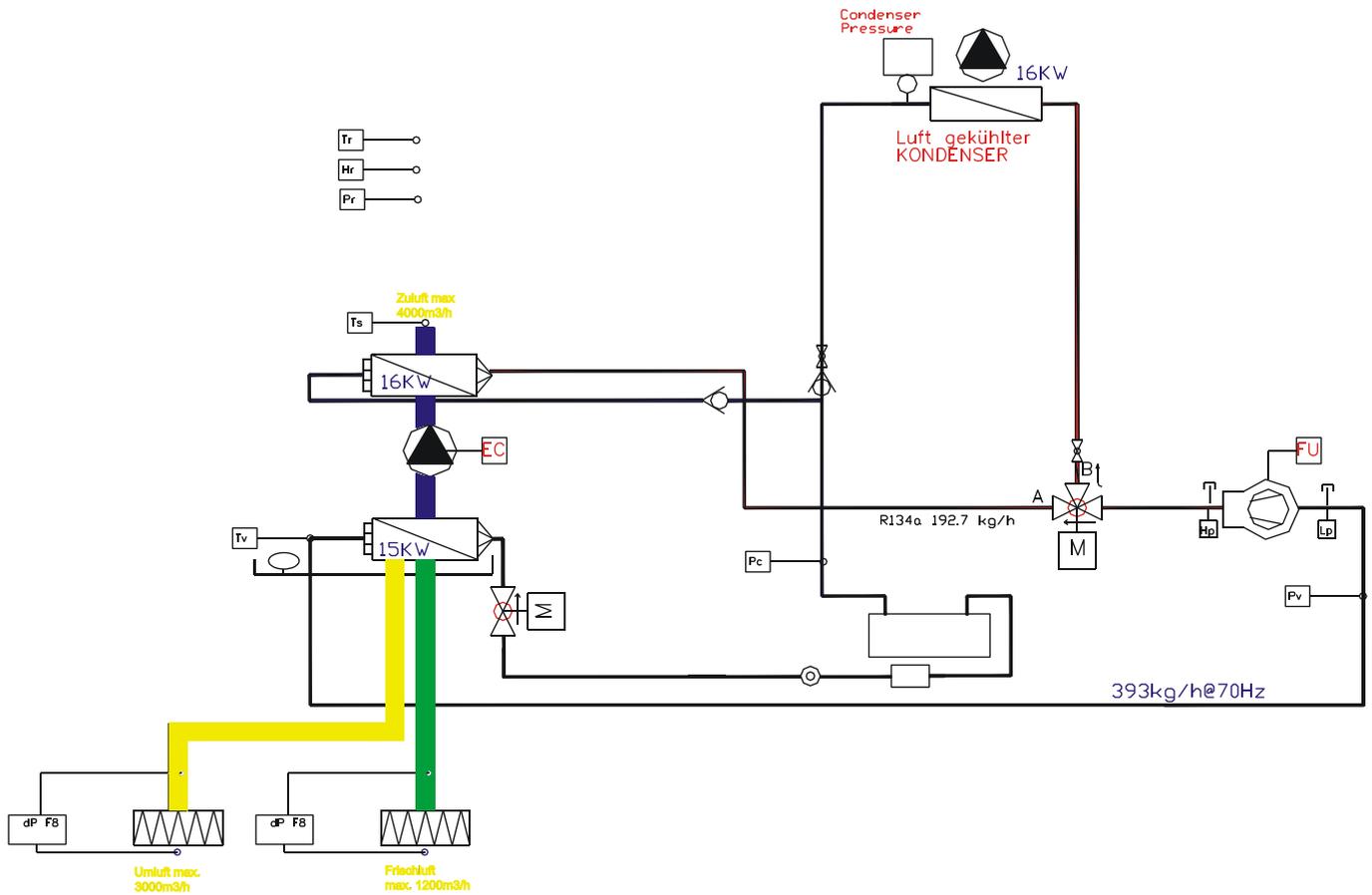


Dimensions AH14000v



## Functional Diagram SIT Airhandler

Example: AH7000v



## Specification Dehumidifier

Version	Dehumidifier DE18-1200
Dimensions (l x w x h)	1.1 x 0.8 x 1.6 m
Max. Air Volume	1'200 m <sup>3</sup> /h
Dehumidifier Performance	15.8 l/h
Cooling Capacity	18 kW
Temperature Control	8°C - 25°C ±1,0°C à (optional ± 0.2°C)

## Dimension Dehumidifier DE18-1200

