oceania
SOLUTIONS GROUP

ETA MATIC Control System for Air Handling Units

Solutions for comfort, hospitals and industrial applications

euroclima®

Your projects, challenges and requirements are our focus. We have a dedicated team that can engineer tailored solutions for your commercial HVAC application.

Oceania Solutions Group is an Australian owned business that focuses on providing engineered HVAC solutions. We value the importance of relationships with our clients and partners. Our team enjoy collaborating and solving complex 'design and construct' projects for your business with our product solutions.

Oceania Solutions Group are proud of our extensive portfolio and experience within HVAC industry. From industrial applications through to commercial air conditioning installations for tropical and high humidity environments.

Operating throughout Australia, New Zealand and the South Pacific Islands, we provide engineered technical data and commercial support for a wide range of HVAC solutions.

Our experienced team of HVAC professionals work hand-in-hand with market leading suppliers of HVAC solutions and equipment.

With international accreditation from Eurovent, CTI, AHRI, TÜV and AMCA, our products are rigorously tested and certified, meeting Australian and New Zealand standards and regulations.

Partnering with trusted international suppliers, we are available to provide an engineered solution for your next project.

Your best partner for air handling units

Since 1963, Euroclima has been a leader in customised air conditioning and ventilation systems. Our partners develop, manufacture and commercialise high quality air handling products for all applications, from basic comfort to healthcare, process air and installations with highly efficient heat recovery systems.

Euroclima is a company with extensive international operations and five manufacturing facilities in Italy, Austria, India and UAE, with more than 36,000m2 of production and offices. They are specialists in the manufacturing and worldwide distribution of air handling units and fan coil units.

Approximately 400 employees are presently employed with a well distributed network of sales and service all over Europe, Asia, Middle East and Northern Africa.

A fully certified system

Euroclima are a part of a number of international certification programs, related to quality, performance, hygiene or energy consumption.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Euroclima participates in the ECP programme for Air Handling Units (AHU) and Fan Coil Units (FCU); Check ongoing validity of certificate: eurovent-certification.comz

qualityaustria SYSTEM CERTIFIED

ISO 9001:2015	No. 03578/0
ISO 14001:2204	No. 02301/0
BS OHSAS 18001:2007	No. 00559/0

ErP Compliant

TÜV SÜD

CE

It certifies that every unit leaving our production lines is built in accordance with the standards required by the European Union.

TÜV AUSTRIA CERTIFIED PRESSURE EQUIPMENT MANUFACTURER

TÜV AUSTRIA SERVICES GMBH

Ventilation and Air-Conditioning technology

- ✓ VDI 6022 (07/2011)
- ✓ DIN 1946-4 (12/2008)
- ✓ SWKI VA104-01 (04/2006)
- ✓ ONORM H 6021 (09/2003)
- ✓ ONORM H 6020 (02/2007

Validity Period: 2012 - 2017

Ex

General data

Siemens Climatix controller series has been developed specifically for the HVAC industry. Completely stand alone operation or remote control via different communication protocols for integration into building management systems are possible. Euroclima software ETA MATIC is perfectly balanced to the needs of every air handling unit. For commissioning it´s not necessary to have programming knowledge or a notebook. Everything will be uploaded with a standard SD-Card which contains the software. All necessary options and features are already included in this software package. During the pre-commissioning in factory the configuration of each air handling unit will be adapted. The user interface is a external display where you can handle every process of the air handling unit.

Flexibility at Your Fingertips

It is necessary to have the data relating to all of the electric commands (kW, V, A) in order to be able to choose the electric cabin. The following supply must be foreseen for the electric cabins: 3 / N / PE 400 V / 50 Hz. Electric cabin in steel panel for wall assembly, unit assembly or supplied loose, protection type IP 55), identification front elements by sublimation printing plates, identification all integrated devices, internal wiring complete for system, insulated canalizations in plastic, terminals in series with insulation-fault current resistance DIN 53480, insertion wires from below with PG cable gland, thermostat and ventilator for heat expulsion. Complete with test certificate and electric diagram.

Dimensions for external cabinet:

- H x W x D 1000 x 800 x 300 mm
- H x W x D 1200 x 800 x 300 mm
- H x W x D 1400 x 800 x 400 mm
- H x W x D 1600 x 1000 x 400 mm

Dimensions for internal cabinet:

- According to device

Supply with main switch:

- Total power < 320 kW standard
- Total power > 320 kW on request

Control transformer 160 VA / 250 VA with microswitches on primary and secondary circuit, 5/10A DC-supply, micro switches for regulator, active sensors and actuators, circuit control current with modules for coupling and terminals for outputs, digital inputs, alarm light indicators on the display, terminals and relay for fire signalling group contact connection, engine winding protection contacts and system authorisation contact.

Total integration into AirCalc

- AirCalc provides an easy and simple user interface where, with just a couple of clicks, an individual solution can be created
- AirCalc provides a clear overview about the costs and equipment of your individual solution

All information in one place

- All information and configurations are stored in the project data. This makes it easy to rework the project at a later date, or send to Oceania Solutions Group experts
- All documents can be created quickly, easily and be prepared for print out

A solution for any project

- Detailed and complete specific texts
- Detailed part list of all used components with an explanation and their properties
- Clear and well arranged structure

Included performances

- Design and planning of individual solutions for your air handling unit
- All necessary components are already chosen in the basic configuration – if you don´t add optionals – the unit will have everything which is necessary
- Cabled/wired and with all components mounted and tested control cabinet
- Sensor, frequency inverters, actuators and all modules can be mounted
- Pre-cabling is possible with sections – plug & play solution as optional
- Complete startup in factory to avoid unnecessary problems on site

Advantages

- Everything can be accessed from one provider - no additional clarification work is necessary
- No organizing work on site because everything comes from one supplier
- All functions, set points and optionals are controllable without computer
- Total integration into building management system
- Total access with every network compatible device (optional)
- No programming knowledge required – all settings can be done via display
- Direct and easy selection of optionals and features in AirCalc

Application

The application has been specifically written by Euroclima engineers. The unit, in combination with the free programmable Climatix controller, allows an optimal modification to the configuration of the air handling unit. Die application gets uploaded to the controller via SD-Card and all parameters and values can be loaded back for later reconfiguration on the SD-Card. So a quick and easy adaption of the software is possible without any computer / notebook or programming knowledge.

- 3-password levels for user, engineer and commissioning notification
- All settings/parameters can be changed via the display
- In/outputs can be manually switched for testing

The application covers all optionals and features for air handling units and offers additional following functionals. Die pre defined operating modes are:

- Off
- Freecool
- Eco
- Comfort
- Automatic

The scheduler is a weekly scheduler with up to six entry's for a day, seven day's and a exception program. With a copy function you can copy the entry's from Monday and Saturday to the other day's.

Control features

Flow rate control

With the flow rate control you can enter set points for supply and return fan for different operation modes: Economy, comfort and free cooling. If necessary you can get high or low pressure due to different settings for supply and return set points in m^3/h.

Fan with 1 or 2 stages

With this control mode you can select the stage for the economy and comfort mode.

Duct pressure control

The fans are controlled over the duct pressure with 2 set points for supply and return fan, same for economy and comfort mode; the set points are adjusted during the commissioning and are changeable only form the service personal. The actual flow rate is always visible on the main page.

Speed control

Same as flow control, but the settings are directly the fan speed, without any control from the duct pressure or the flow rate.

Humidity options

Return

Humidity is controlled with a sensor mounted in the return duct. This allows direct control over room humidity.

Dehumidification with cooling coil

To dehumidify, the AHU cools down the supply air using the temperature control mode. The dehumidification has priority before the temperate control, so the room temperature can decrease without post-heating working (no hot water, no post-heating coil).

Dehumidification with recirculation damper

For the dehumidification the recirculating damper closes and the fresh/exhaust air damper opens; so you use more dry fresh air for dehumidification. This works with small pools and other rooms with high humidity levels. The recirculation damper is always used in the temperature control as a heating sequence (last sequence).

Supply

Humidity is controlled with a supply sensor. The setting must be set higher / lower than the desired humidity range.

Dehumidification with fan speed

With low humidity, the AHU works with the flow rate, speed or stage settings from the Eco comfort mode. With a high humidity the control set up the flow rate, speed or stage to maintain the humidity. This works only with flow rate, speed or stage controlled fans. The settings from the operating mode Eco Comfort are guaranteed.

Dehumidification of outside air with return air by-pass damper

With high humidity in outside air, return air can by-pass the cooling coil. The AHU will operate with reduced air over the cooling coil working with the flow rate, speed or stage settings from the Eco comfort mode. With a high humidity the control set up will monitor the flow rate, speed or stage to reduce the humidity. This works only with flow rate, speed or stage controlled fans. The settings from the operating mode Eco Comfort are guaranteed.

Air quality options

VOC Sensor

This sensor measures various organic gases in the return air and gives a concentration signal; % of a calibration gas. For the measured gases see the data sheet from the sensor.

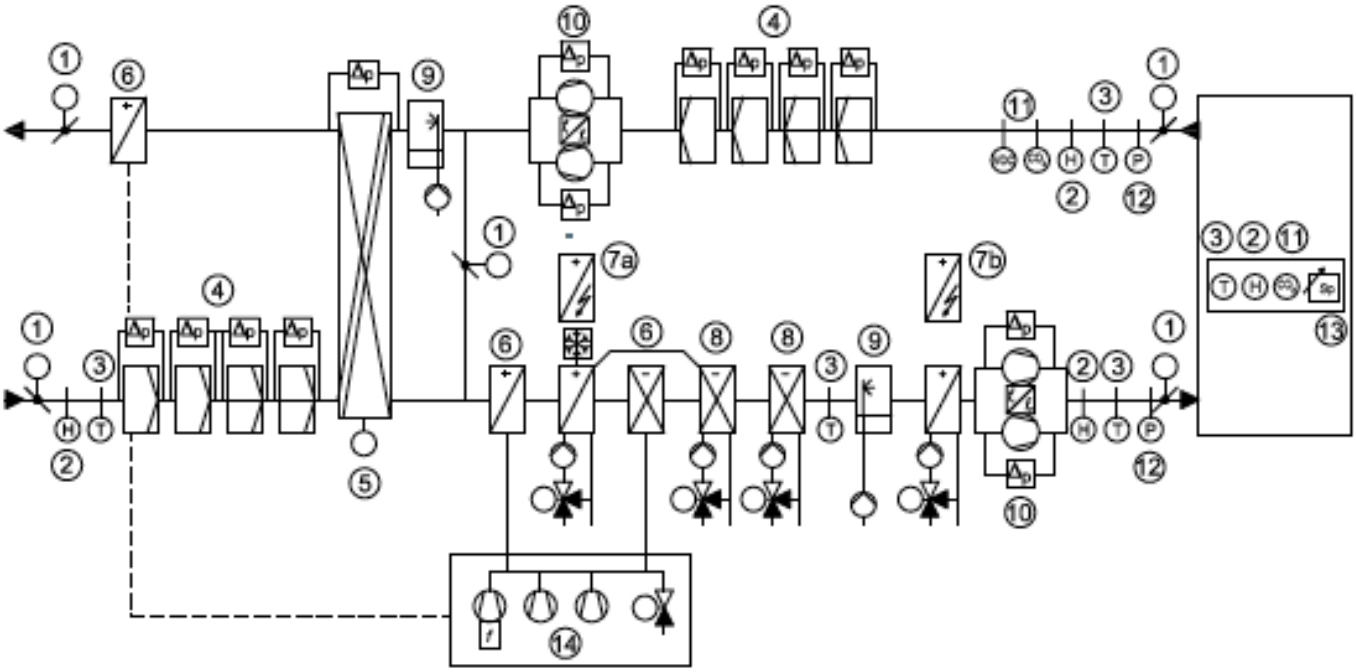
CO2-Sensor

This sensor measures the CO2 concentration [ppm] in the return air.

Recirculation damper

With a good return air quality the most air quantity pass through the recirculation damper and goes as supply air into the room; only a minimum of fresh air is used. With a poor air quality the recirculation damper closed and more fresh air is used. The recirculation damper is always used in the temperature control as a heating sequence (last sequence).

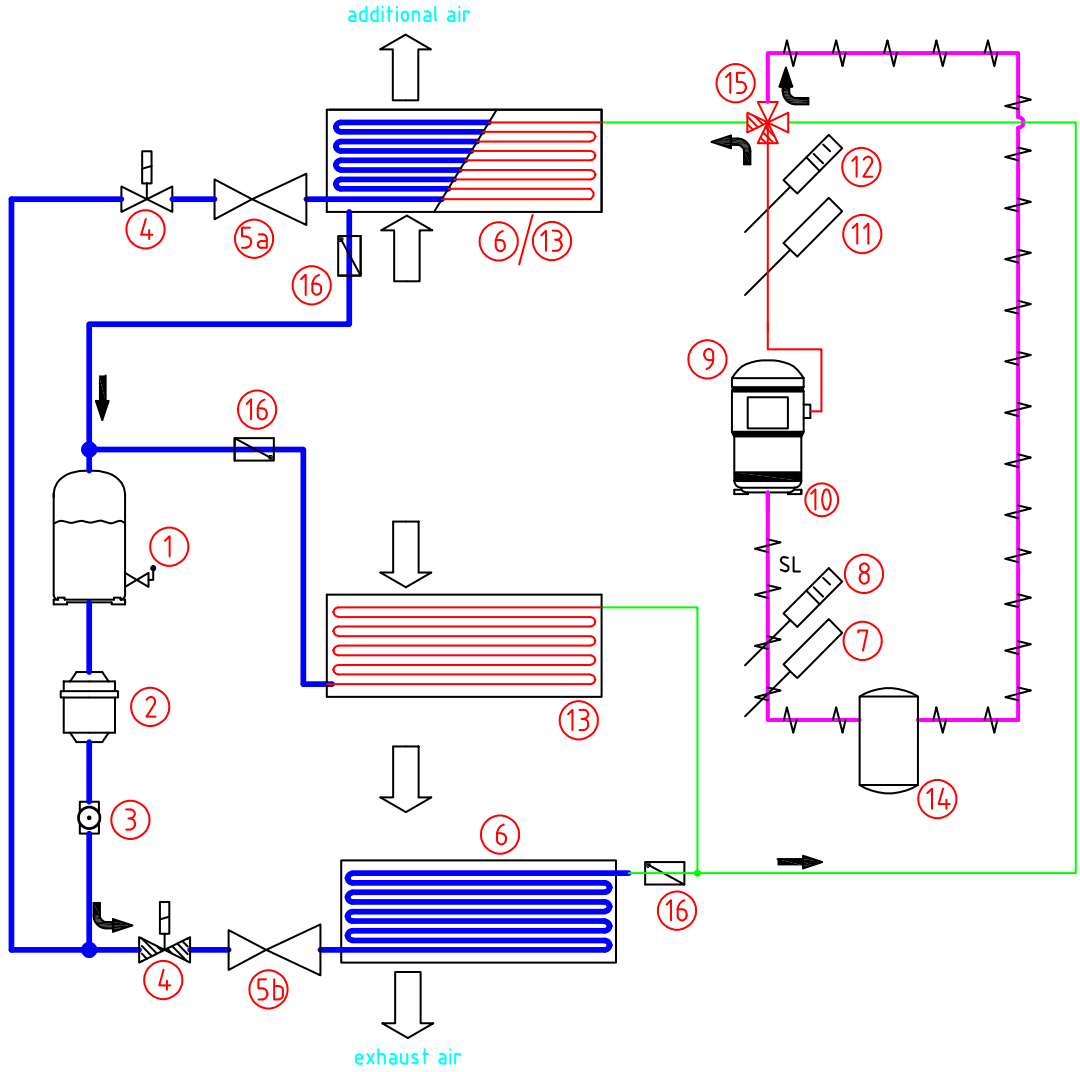
Control options



1. Damper actuator - modulating on/off
2. Humidity sensor - fresh, supply, room, return air
3. Temperature sensor - fresh, saturation, supply, room, return air
4. Filter pressure control - 4 x supply air - 4 x return air
5. Heat recovery - plate heat exchanger, double plate heat exchanger, RAC system, thermal wheel, accumulator
6. Compressor coils - evaporator in supply, condenser in supply/ return (heat pump mode)
7. a) Pre heating coil - water/glycol with 3-way valve actuator and pump or electrical coil (triac / steps)

   b) Post heating coil - water/glycol with 3-way valve actuator and pump or electrical coil (triac / steps)
8. Cooling coil - water/glycol cooling coil 1 & 2 - controlable seperately with 3-valve and pump
9. Humidifier - Steam valve, humidifier, honey comb humidifier - adiabatic return air cooling PAC
10. Fans - supply/return 1x100% or 2x100 (redundancy) with air flow measurement via pressure sensor
11. Air quality - room, return CO2 - return VOC
12. Duct pressure - pressure measurement in supply/return air duct
13. Room unit - remote access for air handling unit
14. Compressor unit - different configurations are possible

DX circuit



1. Collector
2. Filter dryer
3. Inspection window
4. Magnetic valve and bobbin
5. Expansion valve
6. DX-coil
7. Low pressure transmitters
8. Low pressure switch
9. Scroll compressor
10. Oil sump heater
11. Low pressure transmitters
12. High pressure switch
13. Condenser
14. Refrigerant tank
15. 4-way-valve
16. Non-return valve
17. Oil + gas-balancing line incl. inspection window

Components for control - DX

- Dx circuit compressor 1, compressor 2, compressor 3 – on/off 100%, 50% - 50%, 30% - 70%, 33% - 33% - 33%
- Heat pump mode -> 4 way valve – 2 batteries / 3 batteries 2 separate dx circuits -> redundancy, reliability, uprating
- Mechanical or electrical injection valve
- Bypass valve, basin water condenser
- Suction pressure control evaporation pressure sensor, condensation pressure sensor high pressure switch, low pressure switch

Control components

Siemens POL 635.00 Main controller

- Power supply AC 24 V or DC 24 V
- 8 universal I/Os
- 5 digital inputs (potential-free contacts)
- 2 analog outputs
- 6 relay outputs (NO contacts)
- Local service connector for user interface (RJ45) and PC tools (USB)
- SD card

Siemens POL 955.00 I/O Expansion module

- Power supply AC 24 V or DC 24 V
- 8 universal I/Os
- 4 relay outputs (NO contacts)
- 2 analog outputs (DC 0…10 V)
- Peripheral bus interface for local / remote extension I/Os

Siemens POL 895.51 Display

- 8 lines of display with selectable blue and white backlight
- Push-and-roll knob for easy operation
- Alarm button with LED indicator
- Info button
- Powered by controller via bus or HMI on the controller
- Supporting panel and wall mounting

Siemens POL 822.60 Room unit

- Measurement of room temperature
- 2-cable Connection to main controller (KNX)

Siemens POL 925.00 I/O Expansion module

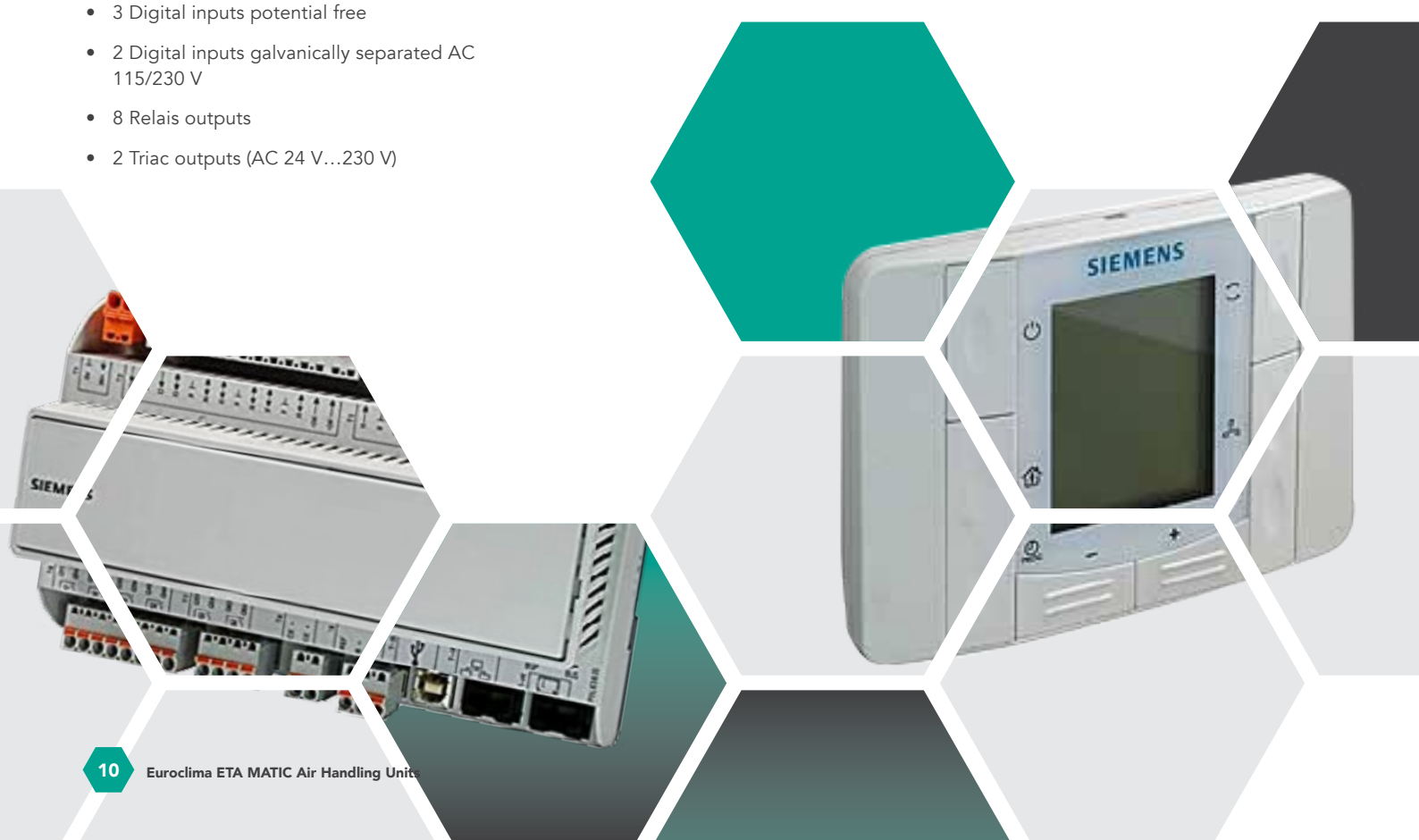
- Supply AC 24 V or DC 24 V
- 4 Digital inputs potential free
- 2 Digital inputs galvanically separated
- AC 115/230 V

Siemens POL 945.00 I/O Expansion module

- Supply AC 24 V or DC 24 V
- 4 Analog inputs
- 4 Relais outputs

Siemens POL 985.00 I/O Expansion module

- Supply AC 24 V or DC 24 V
- 8 universal In/Outputs
- 3 Analog inputs
- 3 Digital inputs potential free
- 2 Digital inputs galvanically separated AC 115/230 V
- 8 Relais outputs
- 2 Triac outputs (AC 24 V…230 V)



Interface components

Siemens POL 902.00 Communication module Modbus RTU

- Integration into BMS via RS 485 Modbus RTU
- 2 Modbus Slaves
- Galvanically separated connection

Siemens POL 904.00 Communication module BACnet MS/TP

- Integration into BMS via BACnet MS/TP
- Supports BACnet MS/TP (B-AAC Profile) with different baud rates

Siemens POL 908.00 Communication module BACnet IP

- Integration into BMS via BACnet IP
- Supports BACnet/IP (B-AAC Profile und BBMD)

Siemens POL 909.00 Communication module WEB-module

- Internet based powered by Intel®
- StrongARM™ SA-1110 processor
- Embedded in Windows CE® platform with web server program
- Generictree for writing and reading of data points
- Platform for web applications

Siemens POL 906.00 Communication module LON

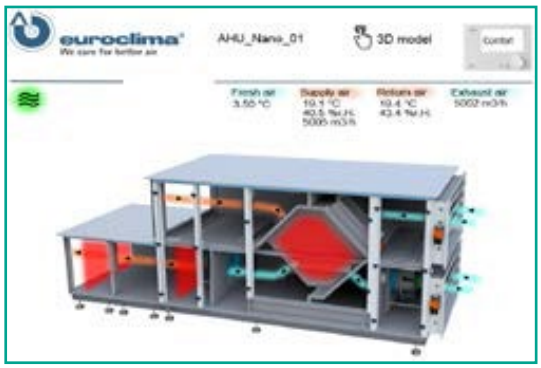
- Integration into BMS via LON network
- Galvanically separated connection to LON Network via 78kbaud Rate
- TP/FT-10 Transceiver

Intelligent integration

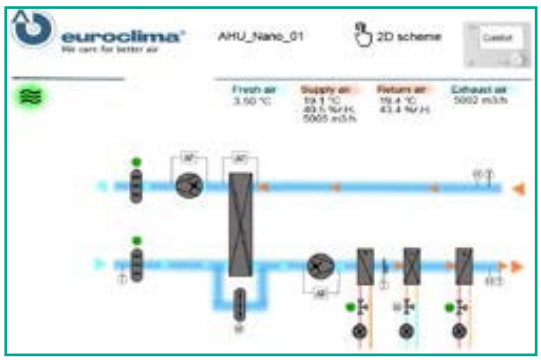
Euroclima controls provides in each unit the “Web-Display”, which is accessIble via Web-Browser in the LOCAL network. With this “Web-Display” you can switch the unit on/off, change setpoints, set configuration points.

There are 2 optional packages, which you can use f.e. as a small building management system -overview.

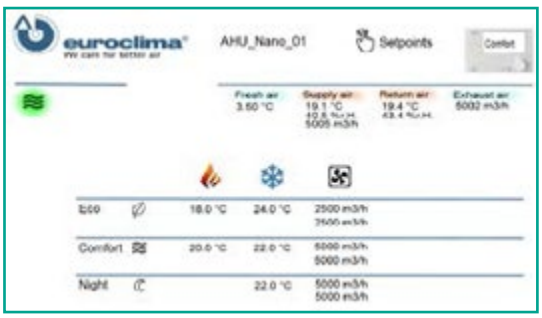
With the optional package „Climatix Basic“, additional to the „Web-Display“ a customized 2D/3D - Visualization of the unit is available in the web server (3D only at NANO and POOL SPA units). The web server is only accessible via the local network.



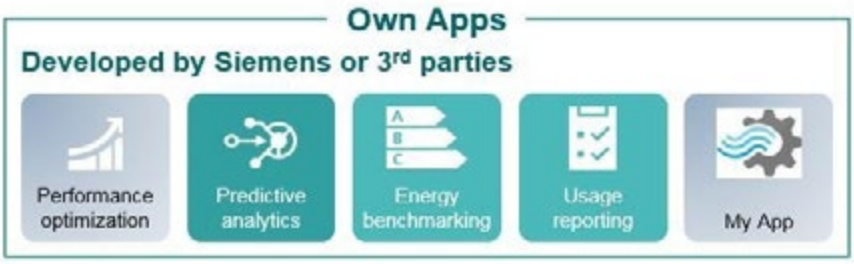
2D view- Web browser

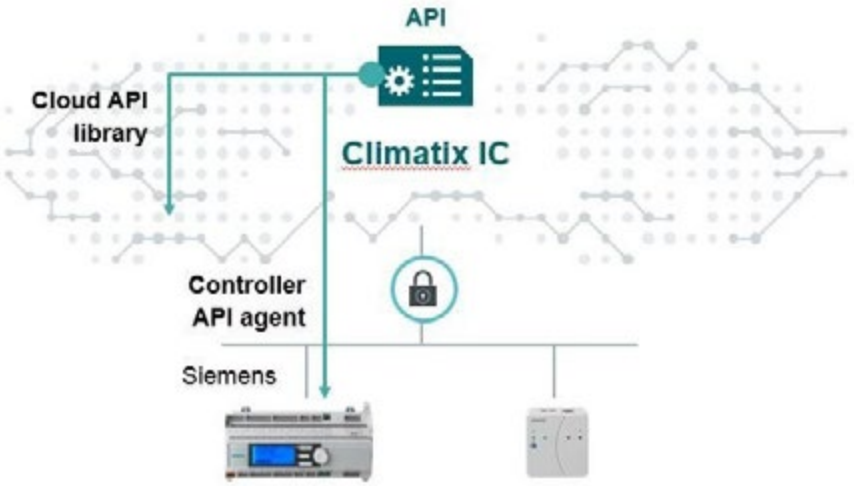


Setpoint view- Web browser



With the optional package “Climatix Basic + Cloud”, you get the basic package + cloud access to the unit for a certain period of time. Cloud access means, that you have access from every smart phone, PC, tablet… which has Internet access from the whole world.

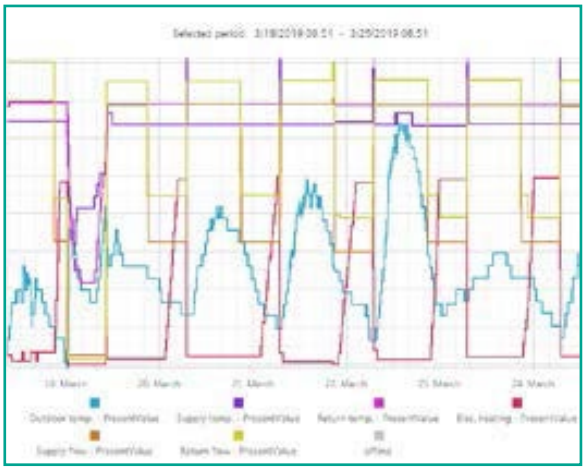




The main advantages for the cloud solution are:

- Remote operation and monitoring
- Data point history trending over years
- Alarm notification per mail
- Fast and cheap service
- Remote update possibility
- Back-up and restore commissioning settings
- Same graphical overview as in basic package

Available units - Cloud



Data point history- Cloud

Euroclima Cloud Test - Account

1. www.Climatixic.com
2. User: Test@Euroclima.com
3. Password: Euroclima1
4. Test the cloud

Overview - Cloud

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