

CONTROL SYSTEM



Ventilation



Heating



Cooling



Humidification

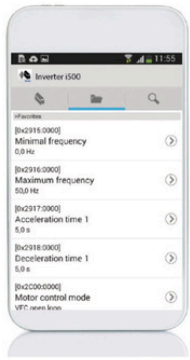


Dehumidification

Executives elements

- Guaranteed highest quality of components available on the market
- Minimised installation, commissioning, and service costs thanks to high device reliability
- Measurement of all key parameters with real-time display on the operating panel and BMS
- Advanced energy optimisation algorithms based on monitoring of air quality indicators such as relative humidity, absolute humidity, CO concentration, and VOCs
- Display of energy consumption for each AHU component enables advanced operational optimisation tailored to the specific characteristics of the ventilated spaces

Lenze inverters – reliable, compact, Modbus, WiFi and USB communication



Pressure transmitters for the measurement of external static pressure, air handling unit airflow volume, or auto-zero function for pressure adjustment in a room



Belimo actuators and valves – renowned for the longest service life and precision of adjustment



Belimo active sensors – fail-safe and featuring excellent precision



Robust safety devices of renowned brands



Integration with AHU components

Filter



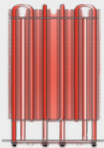
- Soiling detection
- Continuous monitoring of filter soiling level
- Programmable response strategies to detected soiling

Fan



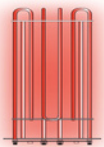
- Smooth adjustment of fan rotational speed
- Control of proper operation of the inverter or EC motor
- Airflow volume adjustment based on pressure measurement using a Venturi tube
- Ability to regulate duct pressure relative to atmospheric pressure

Water heater



- Air-side anti-freeze protection of the water heater
- Active water-side anti-freeze protection, minimising the risk of air handling unit shutdown
- 230 VAC activation signal for a circulation pump contact (small cycle) or low-power single-phase pump (max. 1 A)
- Power modulation via adjustment of the 3-way valve opening degree

Electric heater



- Anti-freeze protection of the water heater on the air side
- Active anti-freeze protection on the water side, reducing the risk of air handling unit shutdown
- 230 VAC signal for activating a circulation pump (small circuit) or a low-power single-phase pump (max. 1 A)
- Heating power modulation through control of the 3-way valve opening degree

Counter-flow heat exchanger



- Variable power control using a counter-rotating damper and bypass mechanism on the heat exchanger
- Optional heat and cooling energy recovery
- Demand-based operation, activated only under appropriate exhaust and outdoor temperature conditions
- Air temperature measurement at the outlet to verify proper recovery operation and detect potential heat exchanger frosting conditions

Rotary exchanger



- Variable power control via angular velocity adjustment
- Demand-based operation, activated only under appropriate exhaust and outdoor temperature conditions
- Air temperature measurement at the outlet to verify proper heat recovery operation and detect potential exchanger frosting risk
- Belt breakage detection

Water cooler



- Power adjustment by proportional opening of the 3-way valve
- The 230 VAC activation signal of the small cycle circulating pump contact or low power 1-phase pump activation (max. 1 A).

Direct evaporation exchanger



- Stepless power control of the genset via a 0–10 VDC signal
- Potential-free start signal for the external generator
- Potential-free control signal for heating mode activation
- Monitoring of the potential-free contact indicating failure or defrost status of the outdoor unit

Steam humidifier

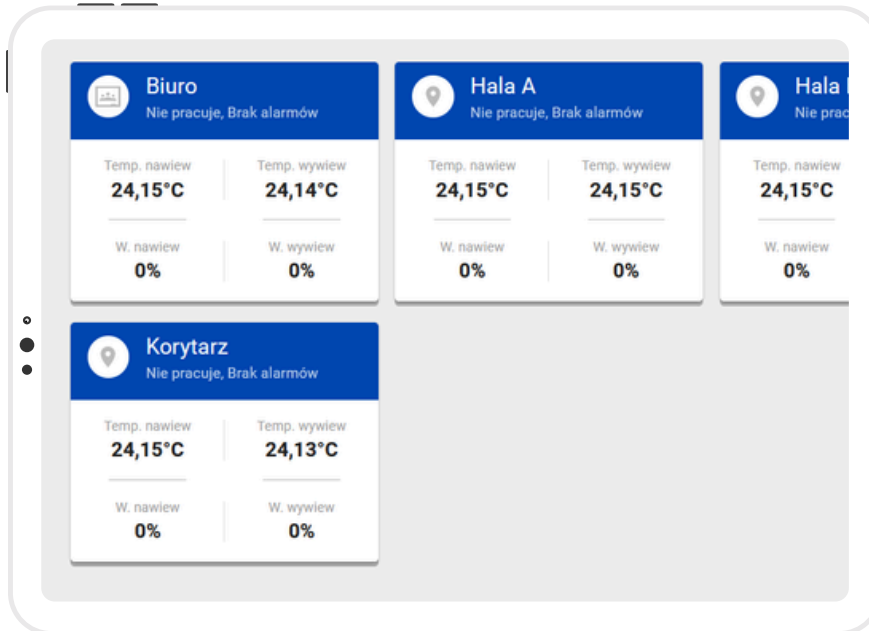


- Humidity measurement using a duct or room-mounted transmitter
- Protection against excessive steam generation via a hygostat installed in the supply air duct
- Humidifier power modulation via a 0–10 VDC control signal
- Fan overrun (run-on) before air handling unit shutdown

Visualization functionality

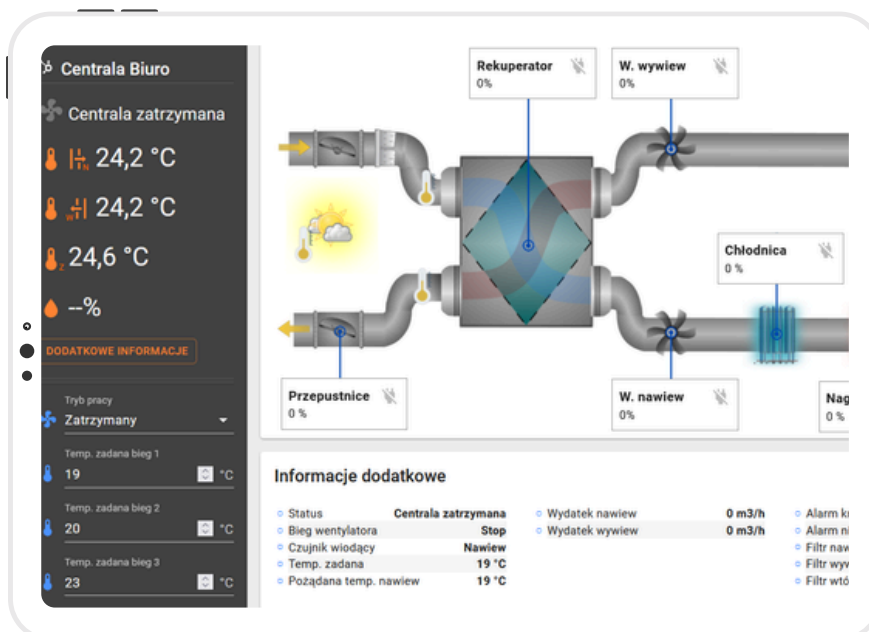
Multivisualization

- Summary window displaying the operational status of any number of control panels, providing information about the status of individual systems
- Ability to independently edit the number of devices, installation names, icons, and IP addresses of the controllers



Main window

- Graphical representation of the status of measuring and actuating elements on a schematic diagram of the air handling unit, aligned with the unit's actual configuration
- Possibility to change operating modes and the corresponding setpoint temperatures
- Display of additional installation-specific measurements and conditions

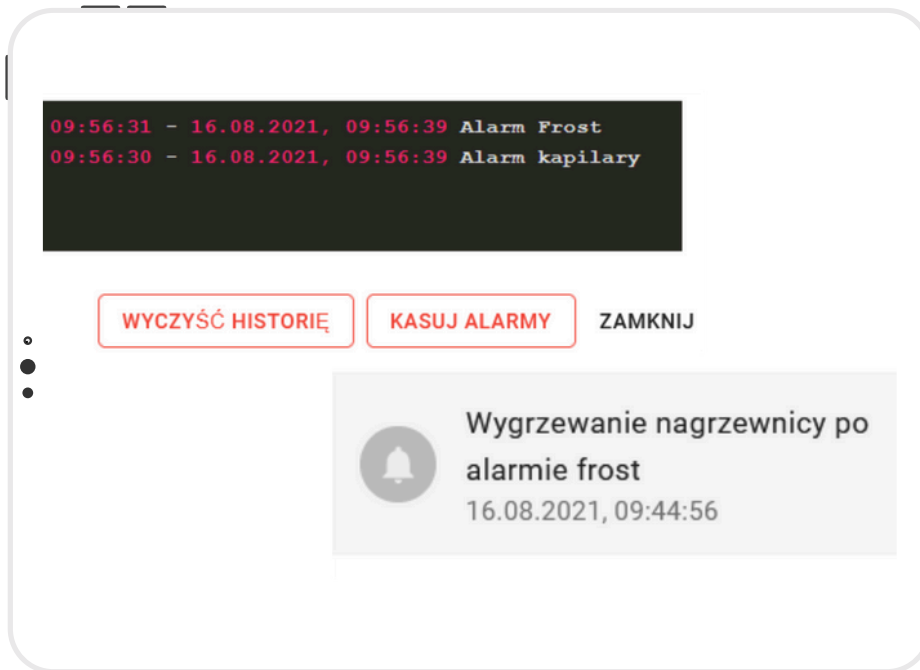


Active alarms

List of active alarms with a verbal description

Alarm history

History of occurrence and duration of critical and non-critical alarms with the possibility of



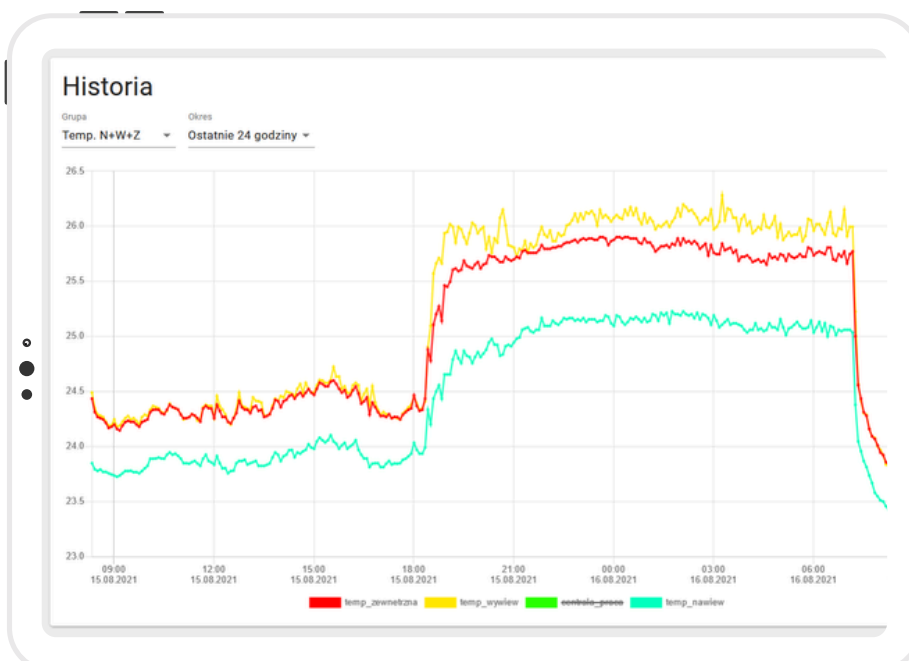
```
09:56:31 - 16.08.2021, 09:56:39 Alarm Frost
09:56:30 - 16.08.2021, 09:56:39 Alarm kapilary
```

WYCZYŚĆ HISTORIĘ KASUJ ALARMY ZAMKNIJ

Wyrzewanie nagrzewnicy po alarmie frost
16.08.2021, 09:44:56

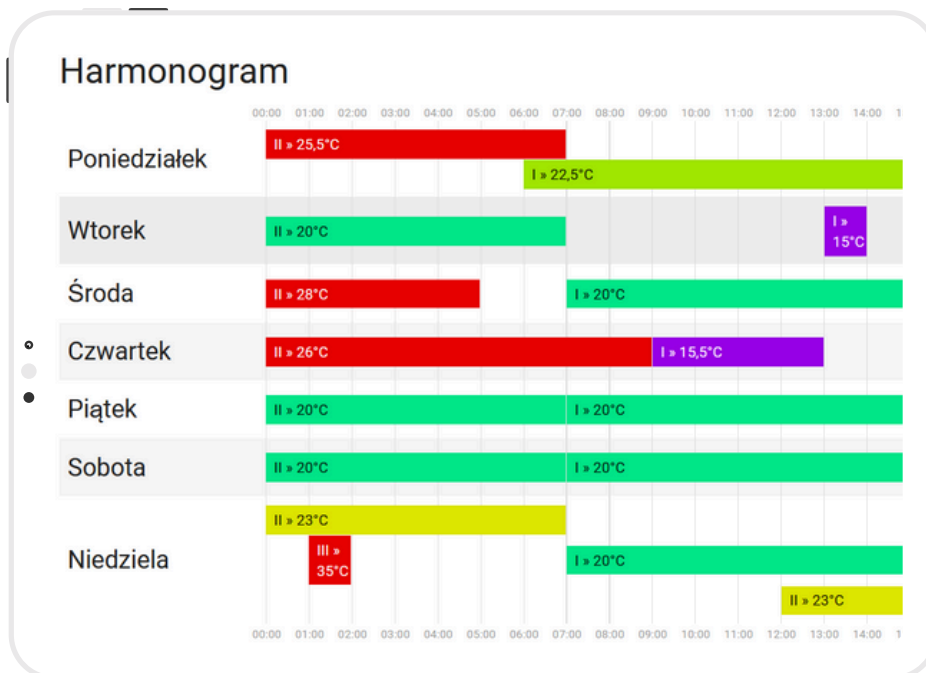
Logs

- Logging of selected measurements, system states, and power outage periods
- Ability to view temperatures and control panel operating status over a selected time range
- Data preview available for the last 24 hours, last 3 or 7 days, or the past month



Schedule

Calendar configuration with graphical schedule representation



Virtual PGD

Access to a virtual PGD operator panel offering full functionality of the physical panel



Integration with External Devices

Clima Gold automation is prepared to cooperate:

- With all devices according to specifications, among others:



- with BMS



Visualization functionality

- Factory pre-wiring of control panels enables quick and efficient commissioning
- Interconnection of control panel sections is achieved using a plug-in system
- The control panel requires only a power supply and connection of peripheral devices



Connection of current cables with durable plugs with IP67



Signal connection by multipin cube in IP54 box



Signal to the valve actuator derived near the exchanger stubs



Made connection between motor and compressors



Installed automation control and measurement elements



Elements for installation in the duct connected on a several-meter cable in a pesch



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