

ELECTRONIC CONTROLLER AHU INSTALLATION AND USER MANUAL

 **TALTERI**

**THE QUALITY GOALS OF AIR CONDITIONING COME TRUE
WITH THE RECOVERY SYSTEM**

TALTERI removes used air from interior and brings in fresh air. Humidity and impurities are exhausted through thermal recovery unit that heats the filtered ambient air cost-effectively. The fresh warm air is channelled draught-free and noise-free into the premises in necessary quantities.

ENSURE THE QUALITY OF AIR EXCHANGE!

ELECTRICAL CONNECTIONS

Electrical connections must be done following the installation manual and wiring diagram.

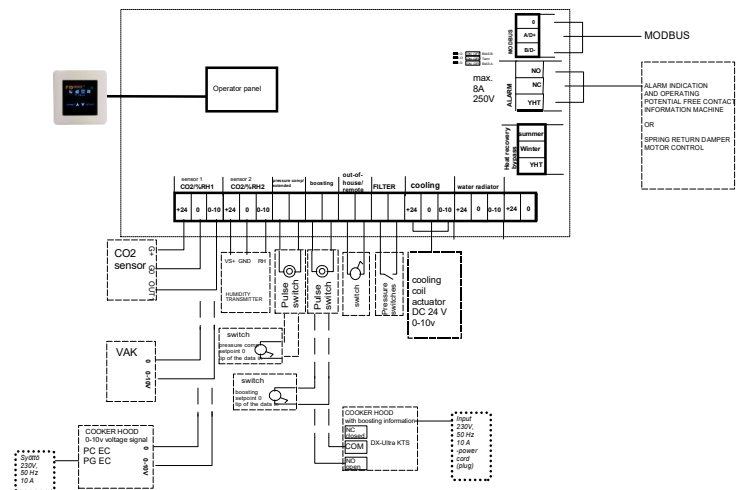
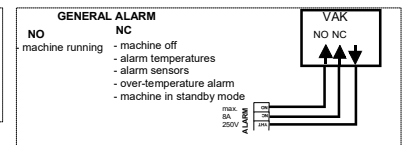
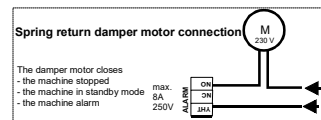
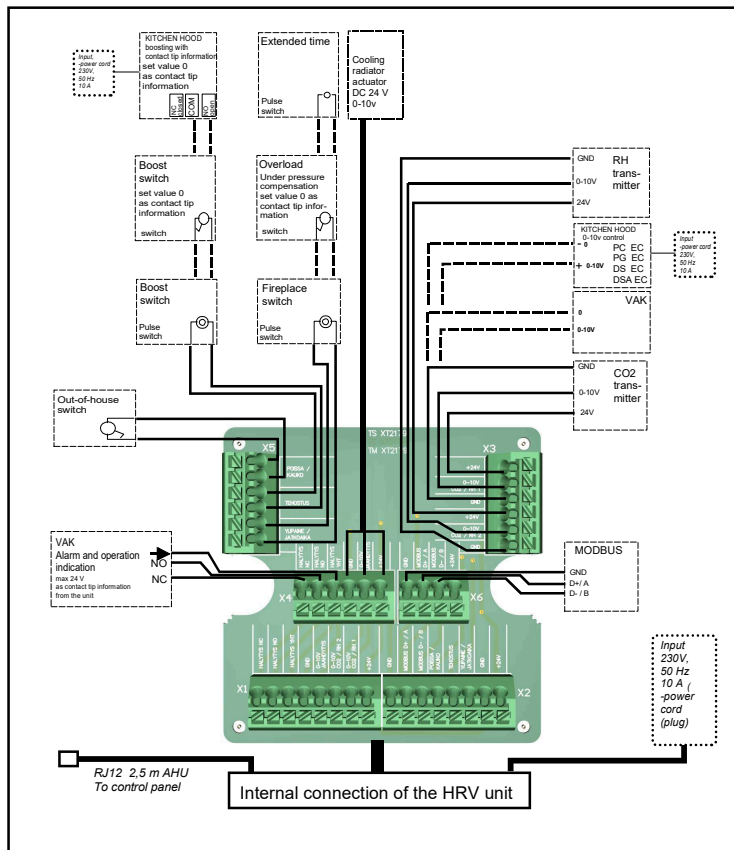
ELECTRICAL CONNECTIONS CAN BE DONE ONLY BY AN ENTREPRENEUR WITH RESPECTIVE INSTALLATION RIGHTS.

The external connections of the machine are connected to the connection box located on the top of the machine (CD) to the control board, located inside the electrical housing. The machine has a plug connector. The control panel is connected to the cable located on the top of the machine with the RJ12 connector (CD) or to the control board.

The following can be connected as accessories:

- Carbon dioxide transmitter;
- Humidity transmitter;
- Separate Overload or Extended Period switch (pulse switch);
- Separate Boost switch (pulse switch);
- Remote control or out-of-home switches (pre-data);
- Differential pressure switches for filters;
- External speed control 0-10V.
- Modbus.

The functions can be operated through maintenance – and setup menus of the operating panel.



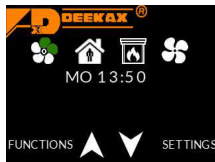
The fan speed of Talteri ventilation unit can be controlled with Ultra PC EC, PG EC, DS-600 EC and DSA-900 EC cooker hood or 0-10 V voltage signal from Control panel.
The voltage signal connected to CO2/RH1 terminal.
Sensor 1(EXT) can be operated through maintenance menu of the operating panel.

The boosting of Talteri ventilation unit can controlled with Ultra KTS cooker hood.
There is a control panel and when the closing damper of the cooker hood is open the fan speed is enhanced.
Maintenance menu is used to set boost 0, there can be operated the quantity of boost too.

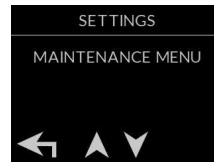
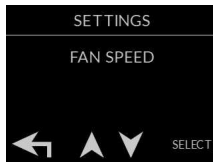
INTRODUCTION OF THE AHU CONTROL PANEL

Settings are applied via the service menu

SERVICE MENU



SETTINGS

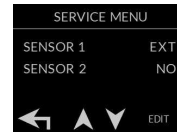


Note: swipe right at the top of the screen

0-10V external control (0-10V hood, remote monitoring) select the deployment SENSOR 1 "EXT" or SENSOR 2 "EXT"

External control controls the speed of the basic settings, menu to replace the installed fan speed.
Away, Excess pressure and boost are normally used.

The main screen shows the fan speed at REMOTE CONTROL and below it is the speed of the inlet fan.

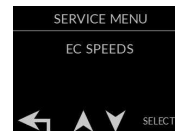


External control fan speeds

0-2V fan 0
2-5V fan 2
5-7V fan 3
7-9V fan 4
9-10V fan 5

FAN SPEED PRIORITY

Fan speed preselection is performed from the control panel service menu.
Inlet and outlet fans can be individually adjusted for five different speeds with fan speeds of 20-100%

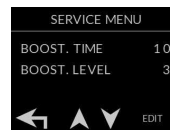


DEFAULT SETTINGS

1. 30 %
2. 40 %
3. 60 %
4. 80 %
5. 100 %

BOOSTING FROM THE COOKER HOOD WITH CONTACT TIP INFORMATION.

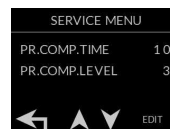
Intensification time settings 0 and 5...120 min. In 0 position with different pre-data
Intensification limit settings 1...4 (the air impellers higher than basic speed)



Factory setting
10 min
3

SEPARATE FIREPLACE SWITCH OR PRESSURE COMPENSATION

Overpressure duration specification 0 and 5...20 min. In 0 position with different pre-data
Overpressure limit regulation 1...4 (inlet air impeller higher than outlet air impeller)



Factory setting
10 min
1

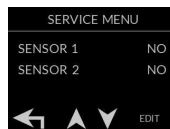
REGULATION of the INLET AIR TEMPERATURE

Inlet air temperature range 5...30 °C,
can be adjusted via SETTINGS menu



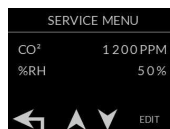
Factory setting
17 °C

CO₂ AND/OR RH SENSORS ACTIVATION



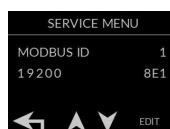
CO₂ AND HUMIDY PERCENTAGE SETTING

Note: set the sensor on in the settings menu



MODBUS MENU

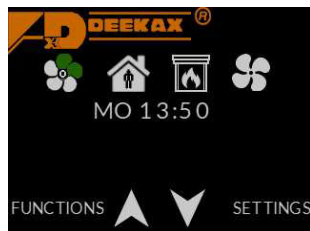
Check the separate Modbus manual



THE CHANGES OF THE SERVICE MENU SETTINGS ALWAYS HAVE TO BE SAVED



OPERATING PANEL USER INSTRUCTION



Touch screen buttons:



Fan speed adjustment 1....5



Out-of-house mode



Fireplace switch
(pressure compensation)



Boosting



The button can be used to browse
the menu upwards and change settings.



The button can be used to browse
the menu downwards and change setting value.



Return to the previous or main menu.

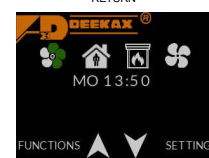
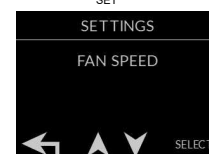
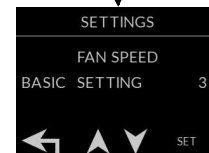
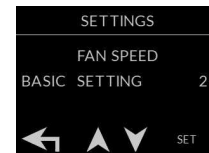
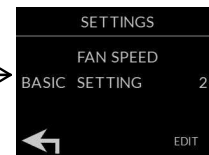
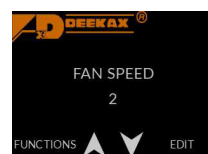
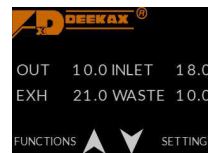
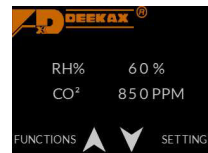
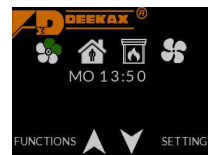
MAIN DISPLAY AND ADJUSTMENT OF BLOWING SPEED

CLOCK
THE DISPLAY ALSO
SHOWS POSSIBLE
INCREASED EFFICIENCY AND
MALFUNCTIONS

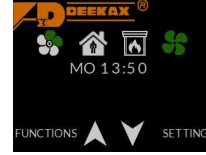
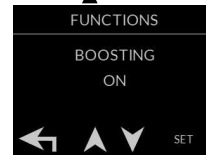
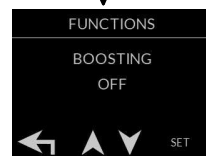
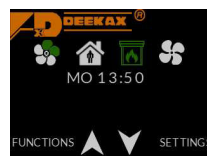
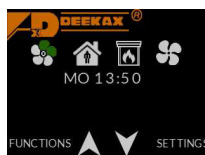
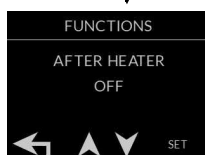
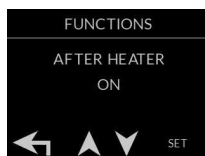
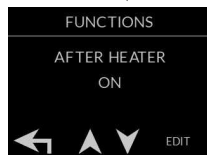
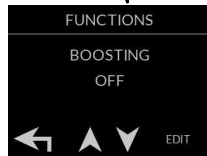
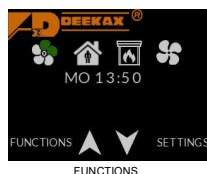
HUMIDITY AND CARBON
DIOXIDE VALUE
IF SENSORS ARE INSTALLED
(accessory equipment)

TEMPERATURE DISPLAY FOR
TEMPERATURE OF OUTSIDE AIR,
INCOME AIR, OUTLET AIR AND
EXHAUST AIR
ACCURACY OF TEMPERATURE
SENSORS $\pm 2^{\circ}\text{C}$

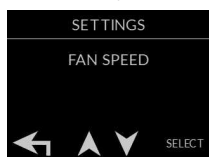
LED OPERATION	REASON
BLINKING RED	SENSOR FAULT RETURN WATER GOLD
RED	INCOMING AIR GOLD INCOMING AIR HOT
BLINKING YELLOW	FILTER PRESSURE- CAP SWITCH MAINTENANCE INTERVAL REMINDER
YELLOW	OUT-OF-HOUSE SWITCH OVERPRESSURE ACTIVATED INTENSIFICATION ACTIVATE CO2/RH INTENSIFICATION ACTIVATE
BLINKING GREEN	PRE-HEATING ACTIVATE
GREEN	AFTERHEATING OR AFTERCOOLING ACTIVATED



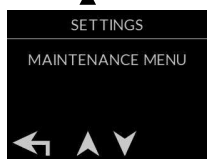
ACTIVATING/DEACTIVATING OVERPRESSURE or (EXT.TIME), INTENSIFICATION AND AFTERHEATING



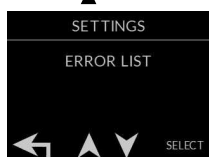
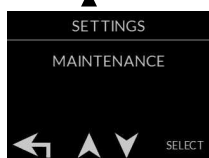
SETUP MENU



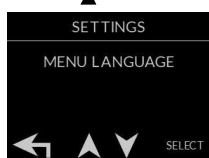
Fan speed adjustment 1....5



Maintenance interval and reset



Display sensor and overheating faults, temperature deviations, filter exchange and starts Fault list reset



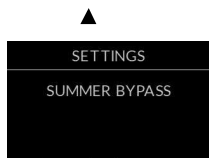
Selecting language suomi, svenska, english or eesti



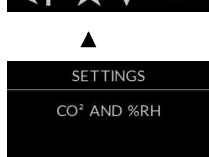
Air exchange can be reduced/increased during selected time periods. 5 different periods can be programmed. Each time period can be set for one or several weekdays. In office-mode, the unit stops for the period out of selection and display reads standby.



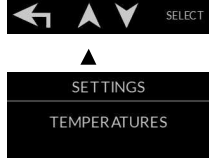
Weekday and clock selection



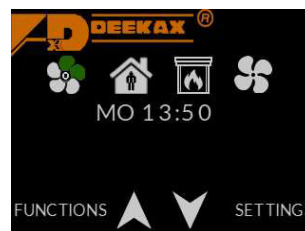
The summer bypass plate control. The user of the unit can set the bypass plate manually to SUMMER/WINTER or AUTOMATIC mode. In summer mode the bypass plate is activated. During the automatic mode, the plate works according to outside temperature. Set value 15...20 °C. The automatic mode has adjustment amplitude of approx 2 hours.



CO₂ transmitter ON/OFF switching. Setting of CO₂ upper limit. Set value 250...1500ppm, 50ppm steps. %RH transmitter ON/OFF switching. Setting of RH upper limit. Set value 30...80%, 5% steps. Regulating amplitude 5...20min.



Regulation of inlet air afterheating set value 5...30 °C



Touch screen buttons:



Fan speed adjustment 1....5



Out-of-house mode



Fireplace switch (pressure compensation)



Boosting



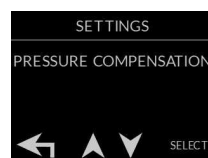
The button can be used to browse menu upwards and change settings.



The button can be used to browse menu downwards and change setting value.



Return previous or main menu.

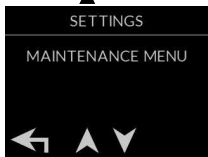
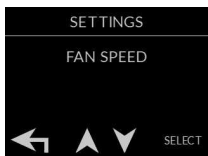


Set value of overpressure duration time (hearth switch) 5...30 min. In 0 position different switch.

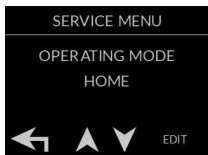


Set value of intensification duration 0 and 5...120 min. In 0 position different switch.

MAINTENANCE MENU



SWIPE RIGHT AT THE TOP OF THE SCREEN



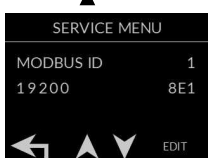
HOME overpressure activated
OFFICE continuation time activated



Return to default settings



Changes of the SERVICE MENU settings always have to be saved



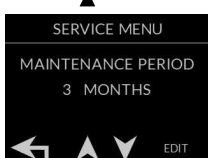
Modbus



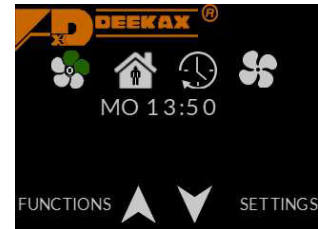
Startup with remote control or separate switch;
"remote control ON" the unit operates only
if pre-data is switched on
OR
Out-of-house mode
"Remote control off" the unit operates on
minimum speed with pre-data switched on



Usable if the differential-pressure switch is present



Maintenance interval reminder settings 0-12 months



Touch screen buttons:



Fan speed adjustment 1...5



Out-of-house mode



Extended time
(Office mode)



Boosting



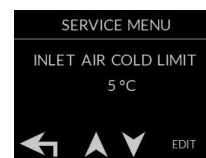
The button can be used to browse
menu upwards and change settings.



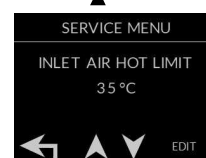
The button can be used to browse
menu downwards and change setting value.



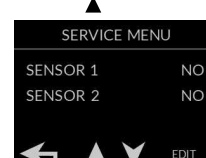
Return previous or main menu.



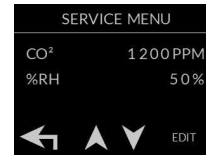
Inlet air cooling temperature -10...15 °C



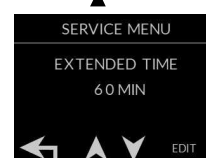
Inlet air heating temperature 30...40 °C



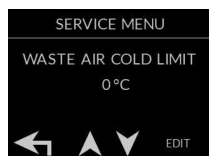
CO₂ and/or RH sensors activation
The external control 0-10 V activation



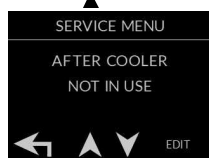
CO₂ and humidity percentage setting



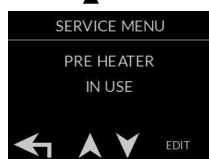
Office-mode continuation time setting
30...120 min. Usable with a separate
pulse-switch if the weekly clock is used
in office-mode.



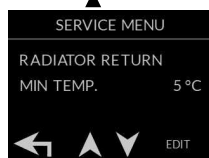
Freeze-alert settings -10...10 °C



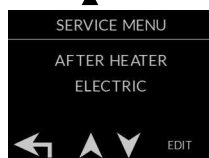
Anti-freeze appliance's control



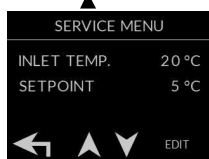
Preheating activation



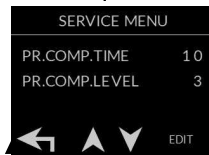
Regulation of VKL-appliance's water battery backup-sensor
Set values 0 and 5...10 °C, 0 – deactivated



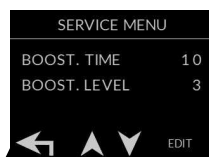
Afterheating selection
ELECTRICITY or WATER



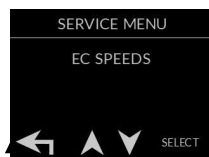
Regulation of Inlet Air and Pre-heating value
The value of pre-heating should be regulated to be approx 5c higher than the limit of cold exhaust air



Overpressure duration specification 0 and 5...20min.
In 0 position with different pre-data
Overpressure limit regulation 1...4
(inlet air impeller higher than outlet air impeller)

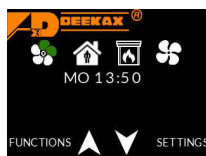


Intensification time settings 5...120min. In 0 position with different pre-data
Intensification limit settings 1...4 (the air impellers higher than basic speed)



EC speeds preselection is performed from the control panel maintenance menu.
Inlet and outlet fans can be individually adjusted for five different speeds with fan speeds of 20-100%

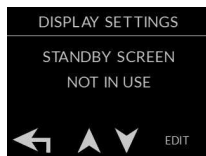
BACKLIGHT BRIGHTNESS AND STANDBY SCREEN



Press and hold the FUNCTIONS for about 5 seconds



Adjustment of backlight



Options : not in use, time and temperatures

3. Operational description of the control panel

3.1. Speed controlling in default state

The supply and exhaust air controlled 5 speed. Maintenance menu can be selected fans (20-100%) are suitable for speeds of the subject. The fan speeds are individually user selectable. At speeds in the service menu is the default setting which the machine starts.

3.2. Overpressurization

Overpressurization state selectable from the outer switch or operation panel. Outlet impeller runs at basic speed, inlet impeller is set to value of the maintenance menu. The intensifications have no impact at this point. The duration of overpressurization in minutes is selectable by the user. New push from the switch launches overpressurization from the beginning.

Overpressurization can be shut down also from operating panel. Anti-freeze is deactivated when overpressurization is switched on.

3.3. Intensification

Intensification of air exchange can be activated from the operating panel or stove hood. Activation from the panel sets the durability of intensification in minutes (5...120min). Maintenance menu is used to set the quantity and default time. In this case, CO₂/RH intensification has no impact. Intensification is activated also according to external data.

3.4. CO₂- and %RH- intensification

CO₂ – transmitter or data given by the transmitter is the basis for air exchange intensification in regulating intervals. The CO₂ maximum limits are set from the panel by the user (250...1500ppm, 50ppm steps). CO₂ measuring values can be seen on the operating panel. The air exchange is periodically intensified by data of %RH – transmitter or transmitters. The maximum limits of relative humidity are set from the panel by the user (30...80%, 1% steps). %RH measuring values can be seen on the operating panel. The card has two transmitter inputs that can be chosen separately for CO₂ or %RH activation and deactivation. Regulation interval is a parameter set through the maintenance menu that determines how often the impeller speed can change in intensification mode. Set value 5...20 minutes by 1 minute. The regulation interval is same for both CO₂- and % RH intensification.

3.5. Out-of-house function

The “out-of-house” function can be selected from the external switch or from the operating panel. The impellers are set on minimum speed. However, previously set intensification or overpressurization will be completed before the impeller speed is reduced or stopped altogether.

3.6. Weekly clock

The program selectable by the user enables to reduce/increase air exchange during selected periods of time. 5 different time periods can be programmed at the same time. Each time period can be set with one or several weekdays.

3.7. Office mode

The installer can select the office mode from the maintenance menu – this is useful in case the air exchange system is installed into an office where activities take place mostly during daytime. The speeds are controlled by the weekly clock.

The mode is equipped with continuation switch that enables persons who remain in the office for longer to prolong the functioning of the appliance by set interval. Intensification and out-of-house mode functions are not usable in the office mode. Remote control mode can also be selected from the maintenance menu that enables to switch the unit on and off by the mean of pre-programmed data and weekly clock functions are deactivated.

4. Setting the temperature

Temperature is measured from four different sources: temperature outside, inlet temperature, outlet temperature and exhaust air temperature. The temperatures are displayed on the operating panel. The precision of measurement is +/- 1 degree.

4.1. Afterheating

The thermostat leads the afterheater located in the inlet channel. The heater can be electrical or water heater and is selected by the installer from the maintenance menu. The heater keeps inlet air at the exact temperature selected by the user. The desired temperature can be set from the operating panel. Set values are between 5 – 30 degrees.

4.2. Preheating

Preheater is an electric heater located in the outlet channel. The preheater's thermostat is driven based on the temperature of exhaust air. Preheating is meant for prevent freezing of the recovered heat. The temperature setting of the thermostat can be selected by the installer from the maintenance menu with limitations of 0 – 10 degrees.

4.3. Summer cassette function

The unit is equipped with summer cassette for heat exchange during summertime. The user can select the function manually or let the functioning be determined automatically according to the temperature outside. During the Summer-mode, the bypass plate of the cassette is activated.

The automatic functioning can be set with external temperature between 15 – 20 degrees.

5. Alarms and reminders

5.1. Activation of overheat protection

Information on activation of overheats protection connected to electrical afterheater and preheater is received from the heater. In case the protection launches, the impellers are automatically set on minimum speed, red indicator light blinks on the operating panel and the display informs about malfunctioning.

5.2. Inlet air too cold

Inlet air minimum temperature must be set from the maintenance menu. When the air temperature is lower than set, the information will be displayed on operating panel and red indication light is turned on. The inlet impeller is stopped and the speed of outlet impeller is reduced to minimum. These actions prevent the water-circulation battery from freezing.

5.3. Inlet air too hot

Maximum limit of inlet air temperature must be set from the maintenance menu. When the air temperature exceeds the set limits, respective information will be displayed on operating panel and red indication light is turned on. The inlet impeller is stopped and the speed of outlet impeller decreased to minimum.

5.4. Exhaust air too cold

The exhaust air temperature minimum limits must be set from the maintenance menu (-10 ... 10 degrees). When the air temperature is lower, warning is displayed on the operating panel and red indication light is turned on. The temperature is attempted to keep above the set value by reducing the speed of inlet air impeller (see also preheating) by regulating it one-step at a time. In case the air temperature does not rise over the alarm limit even when the impeller is completely stopped, the red indication light starts to blink and freezing alert is displayed. In case the temperature is restored to normal, normal functioning will be also restored by increasing the impeller speed one-step at a time.

5.5. Danger of water battery freezing

In VKL machines can be set the temperature of the water radiator from the service menu "radiator return min temp" and when the value falls down, a notification is displayed and the red indicator lights up in the control panel. The inlet fan is stopped.

5.6. Alarms for remote monitoring

General alerts may be taken into the remote control from potentially free relay. Alarms are obtained inlet air hot or cold, danger of water battery freezing, overheat protectors and if the machine is stopped.

5.7. Maintenance interval reminder

When the maintenance interval is complete, the respective information is displayed on the operating panel and the indication light blinks green. The user can reset the reminder after the filters have been changed. The maintenance interval counter is reset and the new alert will be transmitted after the period has been completed again. The maintenance interval can be set between 3 – 12 months.

5.8. Filter-dirty notice

Differential pressure switch can be installed to the equipment that measures dirtiness of the inlet air filter by monitoring its differential pressure. When the switch runs, the display transmits the necessity of filter-change and the indication light blinks yellow. Differential pressure switch is taken into use through the maintenance menu and it deactivates maintenance interval reminder