

# User manual for building technologies A and S

## I. BLINDS CONTROL

The installed blinds have a significant impact on the energy balance of the building (apart from shading) in summer and winter. Therefore, close the blinds in accordance with the weather conditions when leaving the room for longer periods and when leaving work.

For individual user control of the blinds (pulling, retracting and tilting) there is a separate controller located near the individual windows. A central control (by the parent MaR system) will ensure that they are fully retracted daily, always at 23.10. In the case of central retraction, the user can subsequently change their settings via the controller according to his individual requirements - this option always takes priority.

When the window sash is open, in both full and ventilation positions, the interwindow blinds of the opening part of the window stop and cannot be operated. This is therefore not a fault!

## II. HYGIENIC AIR EXCHANGE

All areas of Buildings A and S are centrally air exchanged. The intensity of air exchange is adapted to the time of day and operational requirements.

The ventilation of the sanitary areas is solved by exhaust fans with local control. Kitchen ventilation can be done by switching on the local fan with automatic timer by means of separate buttons located on the kitchen tiling panel.

## III. COOLING, HEATING CONTROL - WALL-MOUNTED ROOM UNIT

In the office areas, standard heating units are installed *for heating* in the winter (transitional) period, and a water cooling system in the building's ceiling structures *for cooling*. In selected offices or specialised workplaces, the cooling system is supplemented by cooling equipment - fan-coil and split cooling units (see below).

The local Delta room temperature correction controller (see Figure 1, located near the entrance door of each room) senses and displays the outdoor temperature, the indoor room temperature (measured at the controller location) and the user-set (selected) room temperature on the controller. The heating radiator valves or the cooling water supply valve to the ceiling structure are controlled via the controller to the desired - user-selected - indoor space temperature. The arrow buttons at the bottom of the controller are used to set the user-defined room temperature value (the top row of buttons has no function). The current status of the system (heating or cooling) is then shown on the display with a flame or flake symbol.

The systems maintain a **constant** room temperature. Thus, in winter it heats to a **mean** value of about 22°C, in summer it cools to a **mean** value of about 24°C. The individual requirement can then be set in most rooms with the controller within a range of +/- 3°C (the selected desired temperature shown on the controller display).

When changing the temperature requirement with the correction control, an immediate thermal change cannot be expected, especially from the cooling system. The response to the demand will take place over a longer period of time. In summer cooling, due to the considerable inertia of the cooling system, the user setpoint will not change to the setpoint during night and weekend periods. In the case

of heating, the heating setpoint will then be reduced to the setback temperature during the night hours and **back to the mean value** during the morning hours.

In part of the teaching and laboratory areas, fan-coil units are additionally placed for the purpose of more intensive cooling. The same wall-mounted controller is used to control them. By setting the desired temperature on the controller, the cooling unit (or group of units) is automatically switched on/off. During night hours, the operation of these additional units automatically switches to a cooling setback value of 27°C.

In all modes, the status of the window opening is visualized on the local Delta controller, followed by the blocking of the heating or cooling function. In this case, the controller displays a temperature of 7°C - as a safety setpoint against freezing of the central heating system.



Fig. 1 - Delta Local Controller



Fig. 2 - Visualization of the window opening status (7.0°C)

The hygienic air exchange, cooling and heating system is sized for the building **with the windows and doors closed!**

Short-term ventilation through the windows will not compromise the proper functioning of the system, longer-term ventilation is essential. An open window always blocks the heating and cooling system in the room - the cooling and heating supply valves are closed (when the window is opened, the house symbol on the wall control disappears). A door to the corridor or between offices that is open for a longer period of time will also have an adverse effect on the proper functioning.