

Heat pump and zone heating? It works!

Zone heating control in the case of having a heat pump as a heat source is an advanced method of managing temperature in buildings, which offers many benefits and advantages. The heat pump is an economical and ecological heat source that utilizes energy from the surroundings for heating and cooling spaces. Introducing zone control to the heat pump system provides even greater control over thermal comfort and energy savings.

Here are a few benefits of this method:

1. **Energy savings:** Thanks to individual temperature adjustment, the heat pump doesn't need to operate at full power, resulting in lower energy consumption.
2. **Increased heat pump efficiency:** Zone control enables the heat pump to operate more efficiently, increasing system performance and reducing operating costs.
3. **Reduction of energy costs:** By reducing energy consumption, building owners can expect lower heating and cooling bills. This translates to significant financial savings over time.
4. **Increased system durability:** Because the heat pump doesn't need to run non-stop, its operation is less intensive. This can lead to longer durability and less need for repairs and maintenance.
5. **Environmental protection:** Heat pumps are already environmentally friendly, but zone control further enhances their ecological efficiency by reducing greenhouse gas emissions and energy consumption.

Conclusions:

Zone control for heat pumps is an innovative and intelligent method of managing temperature in buildings, which offers many benefits. It allows for increased comfort for occupants, energy savings, reduced operating costs, and environmental protection. Therefore, it's worth considering its implementation in every building equipped with a heat pump to fully utilize the potential of this ecological energy source.



Solutions by TECH Controllers Company.

Have you been using radiator heating for many years? Are you in the process of building a house and planning to install underfloor heating? Or perhaps in your apartment, do you utilize a mixed heating system? In any of these cases, you can afford a zone heating control system. This is because it does not entail any limitations regarding its adaptation to the type of building, a specific heating system, or heating device.

The comprehensive offer from our company in this regard is universal, and the zone heating control system can be installed at virtually any stage of the investment.

In our portfolio, we have products for controlling zone heating in both wired and wireless versions, so everyone can adapt the system to their needs and capabilities.



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Zone heating



Why it's worth it

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How does zone heating work?

When referring to zone heating, we mean an intelligent system for controlling heat in each room separately. Zone heating control is carried out using dedicated devices placed in individual rooms or zones for temperature measurement.

For each zone, the required temperature value is established for that particular location. The measurement devices communicate with the main controller or directly with the heating device. When the temperature is lower than the set value, they send a signal to start the heating device and open the underfloor or radiator valves in the respective zone. Conversely, when the set temperature is reached, the measurement devices send a signal to cease heating demand and close the radiator and underfloor valves in that zone. When all zones are heated to the set value, the heating device and pump receive a signal to end the need for further heating.

By opting for the installation of zone control systems, we do not have to rely on a single thermostat usually installed in the living room or hallway, which regulates the boiler's operation based on the temperature prevailing throughout the entire house.

Benefits of zone heating control

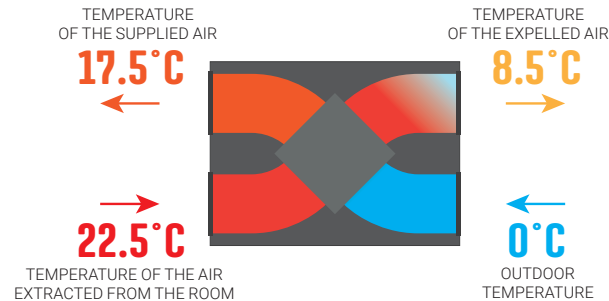
- Customizable room temperature comfort as desired by the user
- No underheated rooms
- No overheated rooms
- Elimination of existing installation imperfections
- No user interference with the heat source
- Prolongation of the heating device's lifespan by reducing its operating time
- Possibility of remote temperature management
- Window opening control
- Wireless communication - possibility of installation in an existing building
- Reduction of energy consumption

**GUARANTEED
SAVINGS OF
25%**

Comfort in every room

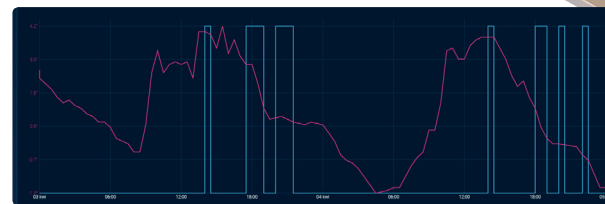
By precisely determining the temperatures at which each room in our living space functions best, zone heating control allows for very accurate control of the heat source's operation. This enables us to avoid ad hoc heating of the house through temporary temperature changes, as well as cooling of the rooms, for example, by frequently opening windows, which, as we know, affects the boiler's operation. Indicating optimal temperatures and, above all, stabilizing them at a certain level allows for a significant reduction in energy consumption, which in turn directly translates into the contents of our wallets.

Air recuperation and zone heating



- The supply air temperature does not allow for heating the rooms, hence heating will be required.
- Recuperation serves for mechanical air exchange with heat recovery, and in this aspect, it works perfectly.
- Zone heating will allow for reducing the supply of necessary energy in individual rooms.

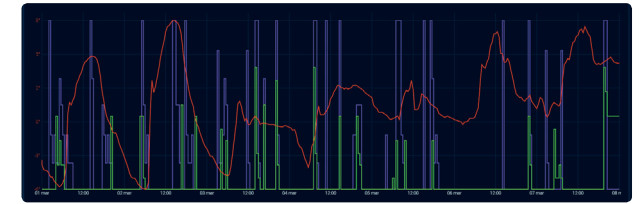
The frequency of operation of the heating device



- Operation of the heating device
- Outdoor temperature

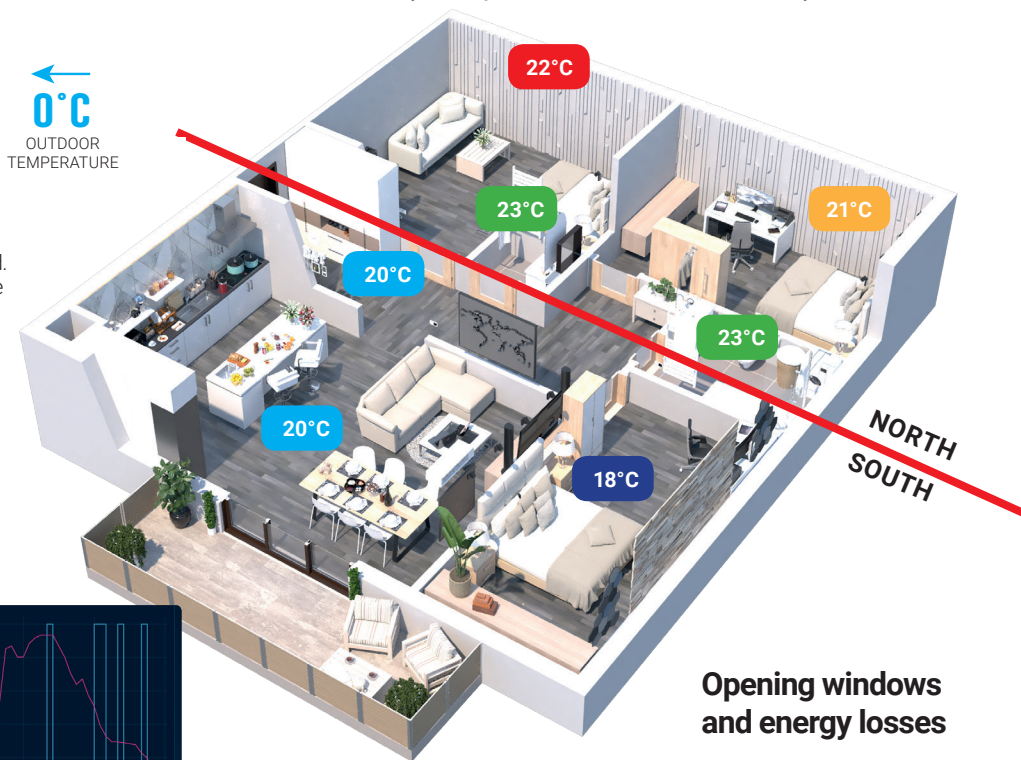
The total time for which the signal is provided to the device is shorter in the case of controlling the heating curve without a signal; such a source would have to operate 24 hours. The number of activation signals does not equal the number of starts of the heat source - this is decided by the source's automation.

Variability of heating needs depending on the location of the rooms



- Room on the north side
- Room on the south side
- Outdoor temperature

Much more frequent radiator opening in the room on the north side of the building. The northern side of the building lacks passive heat gains from the sun on sunny days. Zone heating eliminates unnecessary heating activation when the room is already heated.



Opening windows and energy losses

Opening a window causes the heating to turn off. This prevents unnecessary energy losses during ventilation.

