

Combination of training stands – example 2

Heater system with geothermal energy as the source of heat and fan convector as the heat sink



S1 geothermal energy source or floor heating

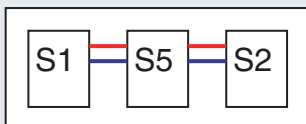


S5 heat pump



S2 fan convector as the source or the sink

Simplified view of the experimental set-up:



Basic experimental set-up

The heat is tapped from the water in the reservoir (training stand S1) by the heat pump (training stand S5) and conveyed to the fan convector (training stand S2). Here the heat is discharged as hot air.

Experiment 1 in detail:

It is beneficial to use this configuration for the first experiment to investigate a water / water - heat pump. In this way, fresh water (10 °C from the cold-water pipe) can be routed over the fittings for flushing and filling of the S5 like for a ground water heat pump over the evaporator heat exchanger and flow in the circuit over the S1, the opened bypass valve and back to the outlet from the fittings for flushing. From here, this water is used for filling the water reservoir of S1.

Experiment 2 in detail:

Three brine circuits tap environmental energy from an energy accumulator (water tank) to investigate a brine / water heat pump. This source circuit can be filled with water for brine-circuit temperatures above 3 °C. Additional experimental variant with "hydraulic adjustment" of the brine circuits and the effects of this on the energy efficiency.

Experiment 3 in detail:

The brine circuit is filled with a water-glycol mixture to investigate a brine / water heat pump with source-circuit temperatures below 3 °C.

►► Any questions about the product?

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