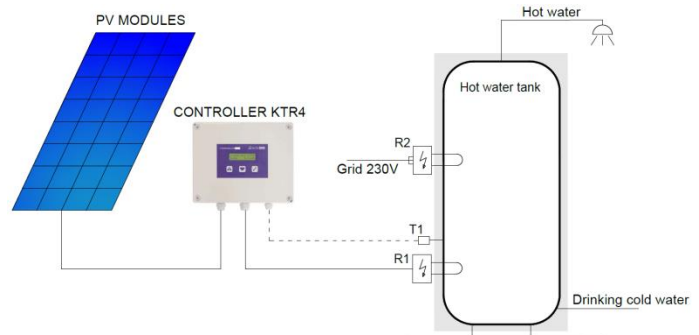


Domestic Water Heating with Photovoltaic Modules
Examples for use of the PV heating controller KTR4
The PV Heater can be integrated in existing heating systems

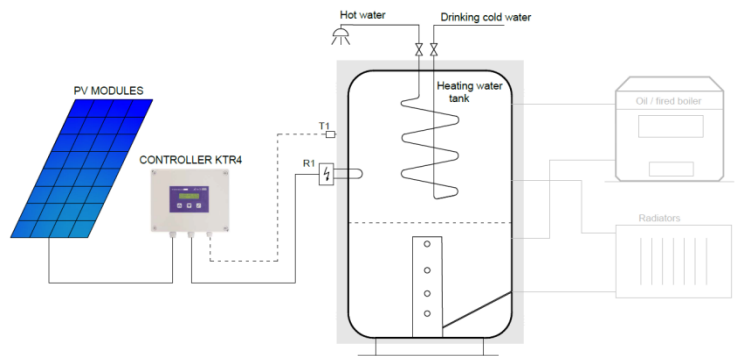
Example 1

Solar electricity warms up the water by electrical heater R1 to the preset temperature. In case of too low temperature the upper, to electrical grid connected heater warms up the water to the desired temperature. To providing the priority for the solar heating the thermostat of the heater R2 should be set to relatively low heating temperature (i.e. 45°C).



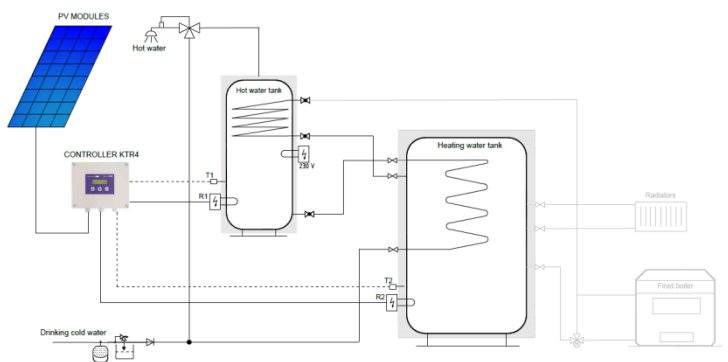
Example 2

Solar electricity warms up the water by the electrical heater R1 in the area of the tube heat exchanger for the drinking water. In case of the insufficient solar energy the desired temperature is reached by means of the wood/oil fired boiler.



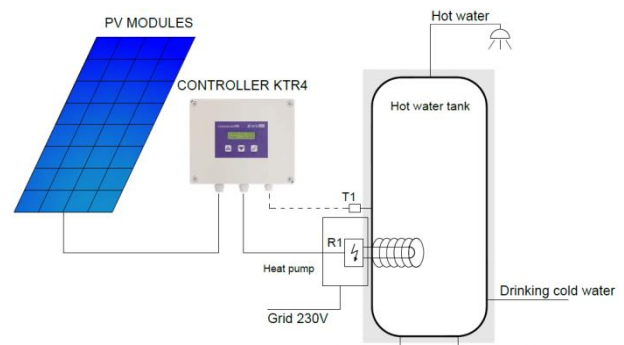
Example 3

Solar electricity warms up the water in the domestic water tank by electrical heater R1. After reaching the preset temperature, by means of the controller KTR4 the warming is switched to the heater R2 in the heating water accumulator. The cold water is preheated in the tube exchanger and enter in the domestic water tank. So the entire energy accumulated in the big water tank can be consumed.



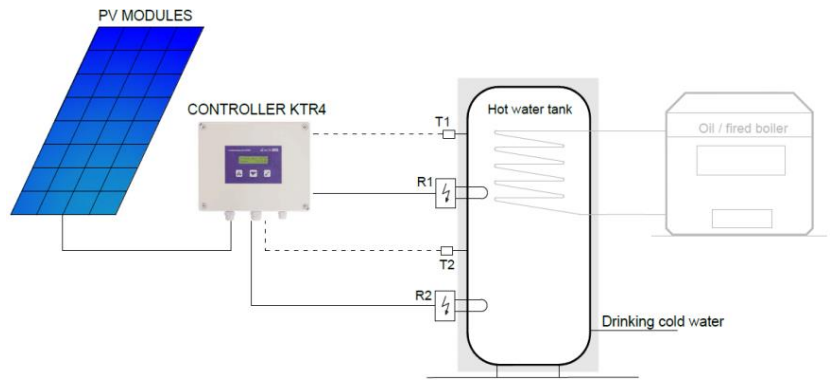
Example 4

The heat pump maintain the preset temperature of the water. Solar electricity warms up the water in the domestic water tank by the electrical heater R1. The preset temperature of the heat pump is lower than the preset temperature of the KTR4 controller, so the PV heating is allways preferential.



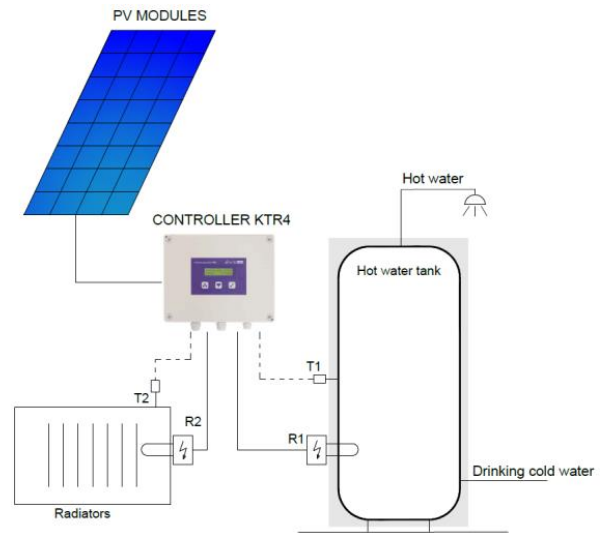
Example 5

Solar electricity warms up the water by the electrical heater R1 in the upper part of the tank. So the warm water are quickly available. After reaching the preset temperature T1, by means of the controller KTR4 the warming is switched to the heater R2 in the lower part of the tank.



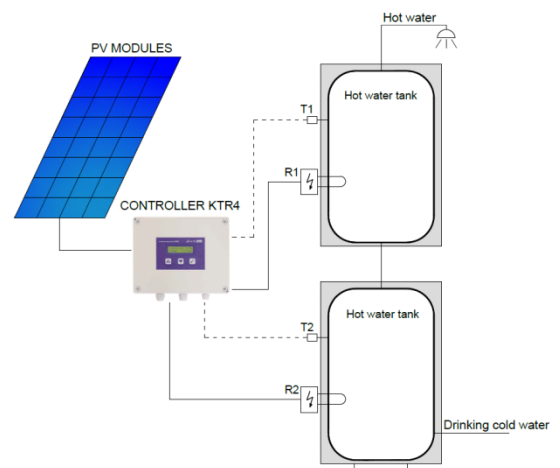
Example 6

First the solar electricity warms up the water in the tank. After reaching the preset temperature T1, by means of the controller KTR4 the warming is switched to the heater R2 in the electrical radiator. The system is suitable for holiday cottages.



Example 7

Solar electricity warms up the water in the preferential domestic water tank by the electrical heater R1. After reaching the preset temperature, by means of the controller KTR4 the warming is switched to the heater R2 in the secondary tank.



Example 8

Solar electricity warms up the water in the heat pump

water tank by the electrical heater R1. The preset temperature of the heat pump is lower than the preset temperature of the KTR4 controller, so the PV heating is always preferential. After reaching the preset temperature, by means of the controller KTR4 the warming is switched to the heater R2 in the heating water accumulator.

