

Why does the temperature fluctuate around the setpoint?

This is not always a fault

Every real heating system has thermal inertia. The controller switches the power on, off or changes it, but the temperature reacts with a delay. Small fluctuations around the setpoint are therefore normal and do not mean that the controller should display exactly one temperature all the time.

What increases the fluctuations?

Excessive heater power, low thermal capacity, an incorrectly positioned probe, large hysteresis, excessively high minimum power or poorly selected control parameters can increase the amplitude of the fluctuations.

How can regulation be improved?

Place the probe in a representative location, limit excessive heater power and do not set the minimum power higher than necessary to maintain the process. Change one parameter at a time and observe at least several complete operating cycles before making another change.